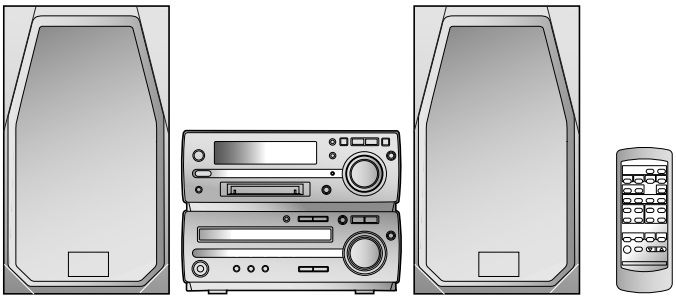
SHARP SERVICE MANUAL

No.S4025MDMX30//



MD-MX30

MD-MX30 MD Compact Component System consisting of MD-MX30(main unit) and CP-MX30(speaker system).

MD-MX30W

MD-MX30W MD Compact Component System consisting of MD-MX30W(main unit) and CP-MX30W(speaker system).

Mini Disc COMPACT disc DIGITAL AUDIO

SAVING ENERGY STAND-BY POWER CONSUMPTION 0.8W

(MD-MX30W only)

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

SAFETY PRECAUTION FOR SERVICE MANUAL(For MD-MX30W)

WARNINGS (CD)

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1. THEREFORE IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS ARE OBSERVED DURING SERVICING TO PROTECT YOUR EYES AGAINST EXPOSURE TO THE LASER BEAM.

1-WHEN THE CABINET IS REMOVED, THE POWER IS TURNED ON WITHOUT A COMPACT DISC IN POSITION AND THE PICKUP IS ON THE OUTER EDGE THE LASER WILL LIGHT FOR SEVERAL SECONDS TO DETECT A DISC. DO NOT LOOK INTO THE PICKUP LENS.

2-THE LASER POWER OUTPUT OF THE PICKUP UNIT AND REPLACEMENT SERVICE PARTS ARE ALL FACTORY PRE-SET BEFORE SHIPMENT.
DO NOT ATTEMPT TO RE-ADJUST THE LASER PICKUP UNIT DURING REPLACEMENT OR SERVICING.

3-UNDER NO CIRCUMSTANCES STARE INTO THE PICKUP LENS AT ANY TIME.

4-CAUTION-USE OF CONTROLS OR ADJUSTMENTS, OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

WARNINGS (MD)

The AEL (ACCESSIBLE EMISSION LEVEL) of the laser power output is less than class 1 but the laser component is capable of emitting radiation exceeding the limit for class 1. Therefore it is important that the following precautions are observer during servicing to protect your eyes against exposure to the laser beam.

1) When the unit case cover is removed and LOADING SW (SW 1956) is turned on and then PLAY SW (SW 1954 mechanism PWB) is turned on in a few second.
   The laser will light for several second to detect a disk.
2) The laser power output of the pickup unit and replacement service parts are all factory pre-set before shipment.
   Do not attempt to re-adjust the laser pickup unit during replacement or servicing.
3) Under no circumstances stare into the pickup lens at any time.
4) If laser optical unit becomes faulty, replace the complete laser optical unit.
5) CAUTION-USE of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION

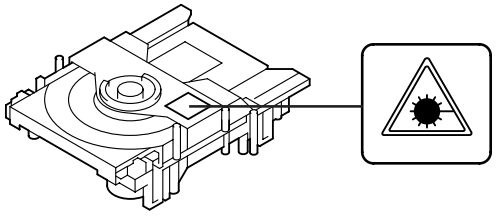
CLASS 1 LASER PRODUCT
APPAREIL À LASER DE CLASSE 1
PRODUCTO LASER DE CLASE 1

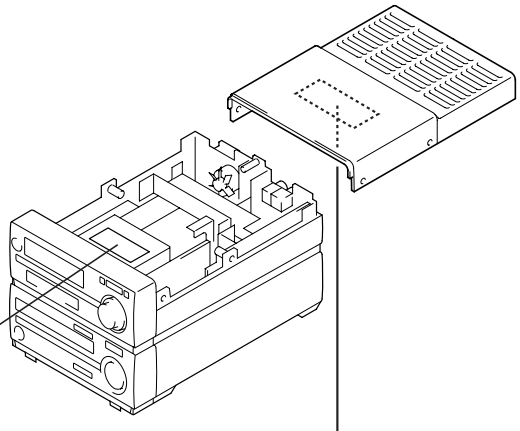
- This MD Compact Component System is classified as a CLASS 1 LASER product.
- The CLASS 1 LASER PRODUCT label is located on the rear cover.
- Use the MD Compact Component System only in accordance with the instructions given in this manual and do not attempt to interfere with the interlock switch or make any other adjustment as this may result in exposure to hazardous radiation.

Laser Diode Properties
- Material: GaAlAs
- Wavelength: 785 nm
- Pulse time:
  Read mode: 0.8 mW Continuous
  Write mode: max. 10 mW 0.5S
  min. cycle 1.5S
  Repetition

Laser Diode Properties

Material:	GaAlAs
Wavelength:	780 nm
Emission Duration:	continuous
Laser Output:	max. 0.6 mW





CAUTION - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM.

VARNING - OSYNLIG LASERSTR LNING N R DENNA DEL R ...PPNAD OCH SP RRAR R URKOPPLADE. STR LEN R FARLIG.

ADVARSEL - USYNLIG LASERSTR LING N R DEKSEL PNES OG SIKKERHEDSL S BRYTES. UNNG EKSPONERING FOR STR LEN.

VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NKYMT ...N LASERS TEILYLLE. L KATSO S TEESEN.

VARNING - OSYNLIG LASERSTR LING N R DENNA DEL R ...PPNAD OCH SP RREN R URKOPPLAD. BETRAKTA EJ STR LEN.

ADVARSEL - USYNLIG LASERSTR LING VED BNING N R SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDG UDSETTELSE FOR STR LING.

CAUTION-INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.

VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.

ADVERSEL-USYNLIG LASERSTRÅLING VED ÅBNING. SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.

VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ TULJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.

VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN GENOM OPTISKT INSTRUMENT.

ADVERSEL-USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.

FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

IMPORTANT SERVICE NOTES (For U.S.A.Only)

BEFORE RETURNING THE AUDIO PRODUCT

(Fire & Shock Hazard)

Before returning the audio product to the user, perform the following safety checks.

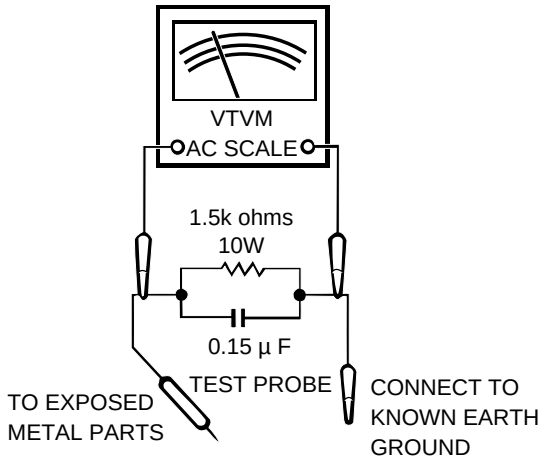
1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the audio product.
2. Inspect all protective devices such as insulating materials, cabinet, terminal board, adjustment and compartment covers or shields, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.

* Plug the AC line cord directly into a 120 volt AC outlet.

* Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15µF capacitor in series with all exposed metal cabinet parts and a known earth ground, such as conduit or electrical ground connected to earth ground.

* Use a VTVM or VOM with 1000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor (See diagram).

* Connect the resistor connection to all exposed metal parts having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.



All check must be repeated with the AC line cord plug connection reversed.

Any reading of 0.3 volt RMS (this corresponds to 0.2 milliamp. AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the audio product to the owner.

VOLTAGE SELECTION(For MD-MX30W)

The voltage selector is located on the AC voltage selector box. If adjustment is necessary, ensure to remove plug of AC cord from AC socket and use a screwdriver in order to turn the selector in either direction. The correct voltage figure is displayed in the window below to the adjustment screw.

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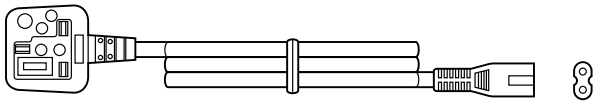

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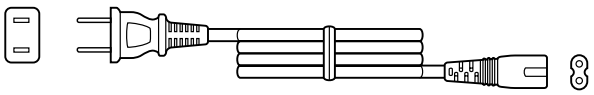

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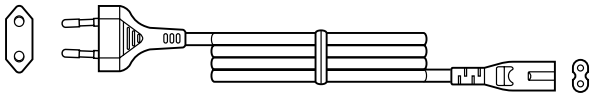

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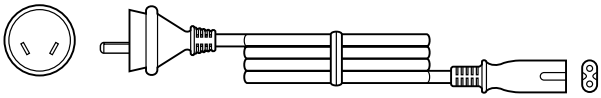

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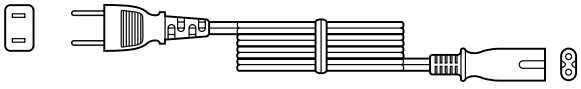


Figure 3 POWER SUPPLY CORD

SPECIFICATIONS (For MD-MX30)

● General

Power source: AC 120 V, 60 Hz

Power consumption: 73W

Dimensions: Width; 8-1/2" (215 mm)
Height; 6-7/16" (162 mm)
Depth; 13-1/2" (342 mm)

Weight: 10.4 lbs. (4.7 kg)

● Amplifier section

Output power: FTC 20 watts per channel minimum RMS into 6 ohms from 60 Hz to 20 kHz with no more than 10 % total harmonic distortion

Output terminals: Speaker; 6 ohms
Headphones; 16 - 50 ohms (recommended 32 ohms)

Input terminals: Auxiliary; 500 mV/47 k ohms

● MiniDisc recorder section

Type: MiniDisc recorder

Signal readout: Non-contact, 3-beam semiconductor laser pickup

Rotation speed: 400 - 900 rpm CLV, Approx.

Error correction: ACIRC (Advanced Cross Interleave Reed-Solomon Code)

Quantization: 20-bit linear (A/D converter)

Coding: ATRAC (Adaptive Transform Acoustic Coding)

Sampling frequency: 44.1 kHz

Recording method: Magnetic modulation overwrite method

Frequency response: 20 - 20,000 Hz

D/A converter: 1-bit D/A converter

Wow and flutter: Unmeasurable (less than 0.001% W. peak)

Signal/noise ratio: 95 dB (1 kHz)

Dynamic range: 90 dB (1 kHz)

Audio channel: Stereo; 2 channels
Monaural; 1 channel (playback only) (long-time recording mode)

● Compact disc player section

Type: Drawer type compact disc player

Signal readout: Non-contact, 3-beam semiconductor laser pickup

Rotation speed: 200 - 500 rpm CLV, Approx.

Error correction: CIRC (Cross Interleave Reed-Solomon Code)

Quantization: 16-bit linear

Frequency response: 20 - 20,000 Hz

D/A converter: 1-bit D/A converter

Signal/noise ratio: 95 dB (1 kHz)

Dynamic range: 90 dB (1 kHz)

Wow and flutter: Unmeasurable (less than 0.001% W. peak)

● Tuner section

Frequency range: FM; 87.5 - 108.0 MHz
AM; 530 - 1,720 kHz

Sensitivity: FM; 2.5 µV (75 ohms unbalanced)
AM; 650 µV/m

● Speaker section

Type: 2-way speaker system
[4-3/4" (12 cm) woofer and 3/4" (2 cm) tweeter]

Maximum input power: 50 W

Rated input power: 25 W

Impedance: 6 ohms

Dimensions: Width; 6-5/16" (160 mm)
Height; 11-1/16" (280 mm)
Depth; 9-1/4" (233.5 mm)

Weight: 7.1 lbs. (3.2 kg)/each

Specifications for this model are subject to change without prior notice.

SPECIFICATIONS (For MD-MX30W)

● General

Power source: AC 110/127/220/230-240 V, 50/60 Hz

Power consumption: 70 W

Dimensions: Width; 215 mm (8-1/2")
Height; 162 mm (6-7/16")
Depth; 342 mm (13-1/2")

Weight: 5 kg (11.0 lbs.)

● Amplifier section

Output power: PMPO; 400 W (Total)
MPO; 96 W (48 W+48 W) (10% T.H.D.)
RMS; 50 W (25 W+25 W) (10% T.H.D.)

Output terminals: Speaker; 6 ohms
Headphones; 16 - 50 ohms
(recommended 32 ohms)

Input terminals: Auxiliary; 500 mV/47 k ohms

● MiniDisc recorder section

Type: MiniDisc recorder

Signal readout: Non-contact, 3-beam semiconductor laser pickup

Rotation speed: 400 - 900 rpm CLV, Approx

Error correction: ACIRC (Advanced Cross Interleave Reed-Solomon Code)

Quantization: 20-bit linear (A/D converter)

Coding: ATRAC (Adaptive Transform Acoustic Coding)

Sampling frequency: 44.1 kHz

Recording method: Magnetic modulation
overwrite method

Frequency response: 20 - 20,000 Hz

D/A converter: 1-bit D/A converter

Wow and flutter: Unmeasurable
(less than 0.001% W. peak)

Signal/noise ratio: 95 dB (1 kHz)

Dynamic range: 90 dB (1 kHz)

Audio channel: Stereo; 2 channels
Monaural; 1 channel (playback only)
(long-time recording mode)

● Compact disc player section

Type: Drawer type compact disc player

Signal readout: Non-contact, 3-beam semiconductor laser pickup

Rotation speed: 200 - 500 rpm CLV, Approx.

Error correction: CIRC (Cross Interleave Reed-Solomon Code)

Quantization: 16-bit linear

Frequency response: 20 - 20,000 Hz

D/A converter: 1-bit D/A converter

Signal/noise ratio: 95 dB (1 kHz)

Dynamic range: 90 dB (1 kHz)

Wow and flutter: Unmeasurable
(less than 0.001% W. peak)

● Tuner section

Frequency range: FM; 88 - 108.0 MHz
AM; 531 - 1,602 kHz

Sensitivity: FM; 2.5 μV (75 ohms unbalanced)
AM; 650 μV/m

● Speaker section

Type: 2-way speaker system
[12 cm (4-3/4") woofer and
2 cm (3/4") tweeter]

Maximum input power: 50 W

Rated input power: 25 W

Impedance: 6 ohms

Dimensions: Width; 160 mm (6-5/16")
Height; 280 mm (11-1/16")
Depth; 233.5 mm (9-1/4")

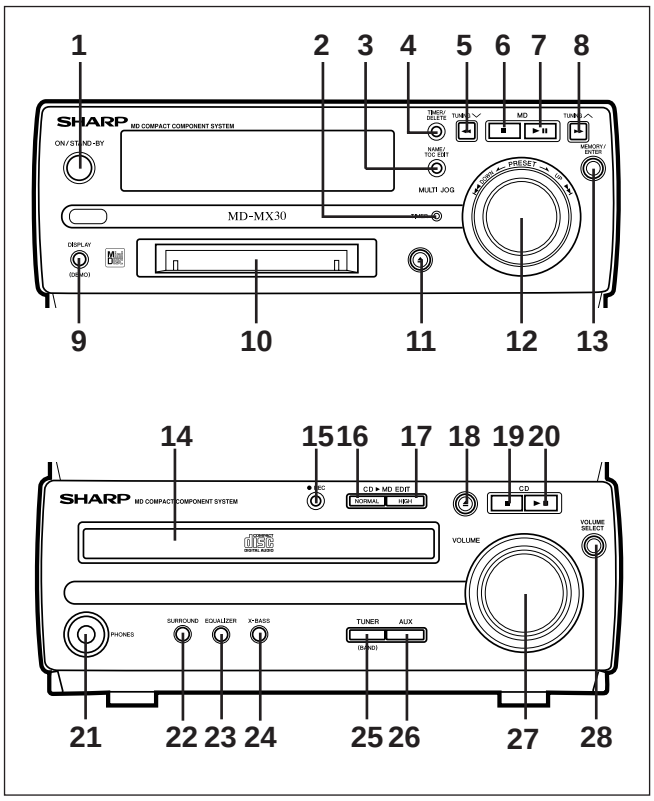
Weight: 3.2 kg (7.1 lbs.)/each

Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

■ Front panel

1. On/Stand-by Button
2. Timer Stand-by Indicator
3. Name/TOC Edit Button
4. Timer/Delete Button
5. Tuning Down/Review Button
6. MD Stop Button
7. MD Play/Pause Button
8. Tuning Up/Cue Button
9. Display (Demo) Button
10. MD Compartment
11. MD Eject Button
12. Jog Dial
13. Memory/Enter Button
14. CD Compartment
15. Record Button
16. CD ► MD Normal Speed Edit Button
17. CD ► MD High Speed Edit Button
18. CD Open/Close Button
19. CD Stop Button
20. CD Play/Pause Button
21. Headphone Socket
22. Surround Button
23. Preset Equalizer Button
24. Extra Bass Button
25. Tuner (Band) Button
26. Auxiliary Button
27. Volume Control
28. Volume Select Button



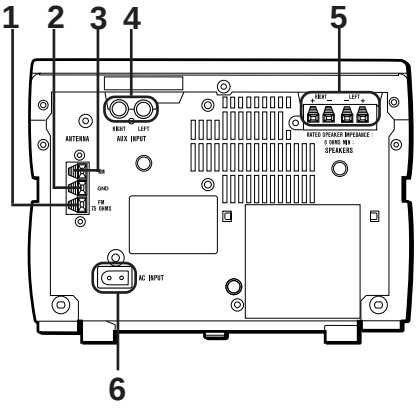
■ Rear panel(For MD-MX30)

1. FM 75 Ohms Antenna Terminal
2. Antenna Ground Terminal
3. AM Loop Antenna Terminal
4. Auxiliary Input Jacks
5. Speaker Terminals
6. AC Power Input Jack

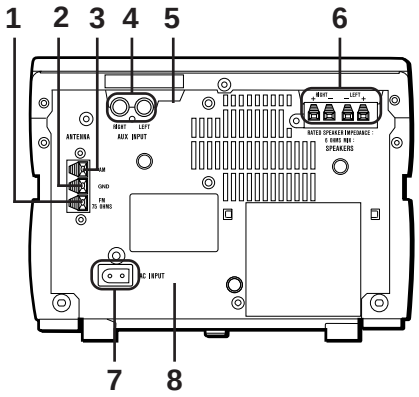
■ Rear panel(For MD-MX30W)

1. FM 75 Ohms Aerial Terminal
2. Aerial Earth Terminal
3. AM Loop Aerial Terminal
4. Auxiliary Input Sockets
5. Span Selector Switch
6. Speaker Terminals
7. AC Power Input Socket
8. AC Voltage Selector

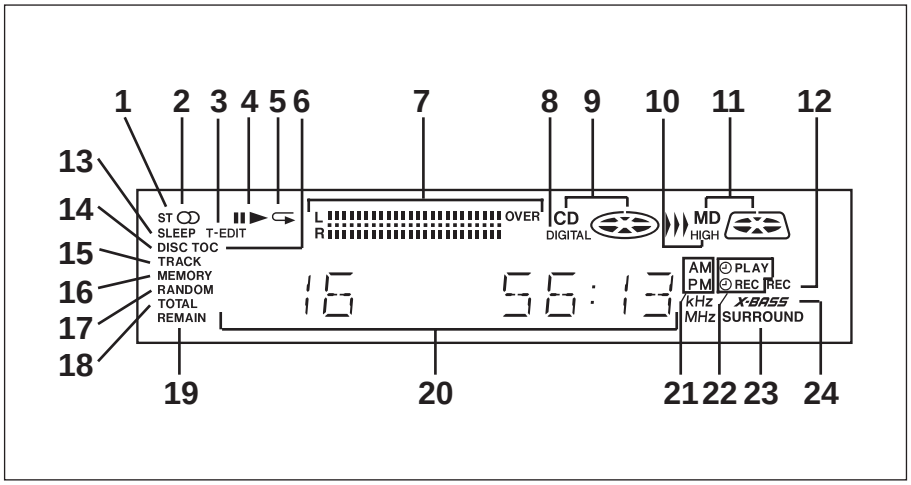
MD-MX30



MD-MX30W

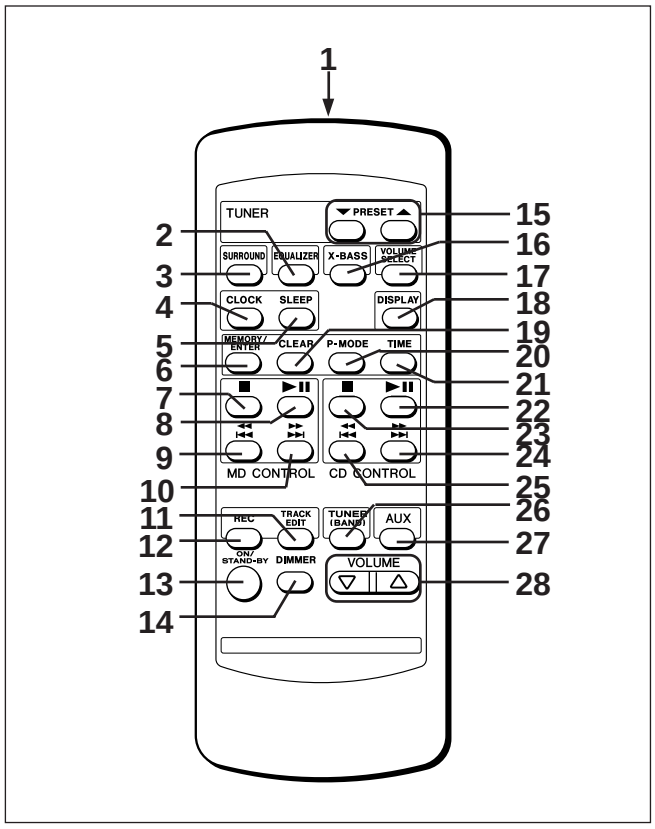


■ Display window



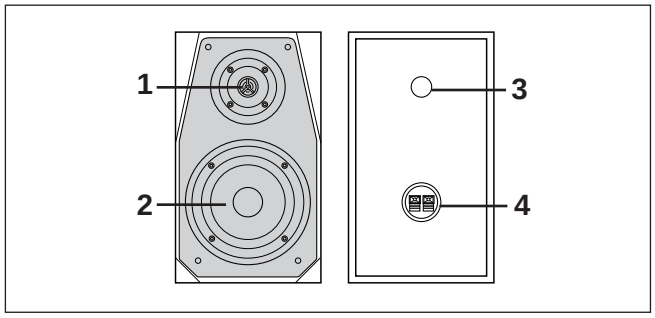
1. FM Stereo Indicator
2. FM Stereo Mode Indicator
3. Track Edit Indicator
4. Play/Pause Indicator
5. Repeat Indicator
6. TOC Indicator
7. Level Meters
8. Digital Recording Indicator
9. CD Indicator
10. High Speed Edit Indicator
11. MD Indicator
12. Record Indicator
13. Sleep Indicator
14. Disc Indicator
15. Track Indicator
16. Memory Indicator
17. Random Play Indicator
18. Total Time Indicator
19. Remaining Time Indicator
20. Character Information Display
21. AM/PM Indicator
22. Timer Record/Timer Play Indicator
23. Surround Indicator
24. Extra Bass Indicator

■ Remote contorol



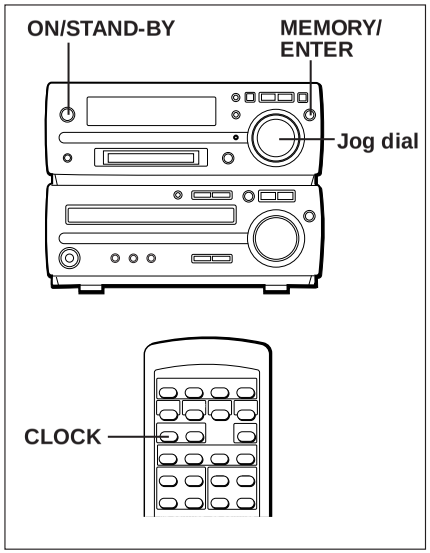
1. Remote Control Transmitter LED
2. Preset Equalizer Button
3. Surround Button
4. Clock Button
5. Sleep Button
6. Memory/Enter Button
7. MD Stop Button
8. MD Play/Pause Button
9. MD Track Down/Review Button
10. MD Track Up/Cue Button
11. Track Edit Button
12. Record Button
13. On/Stand-by Button
14. Dimmer Button
15. Tuner Preset Up/Down Buttons
16. Extra Bass Button
17. Volume Select Button
18. Display Button
19. Clear Button
20. Play Mode Button
21. Time Button
22. CD Play/Pause Button
23. CD Stop Button
24. CD Track Up/Cue Button
25. CD Track Down/Review Button
26. Tuner (Band) Button
27. Auxiliary Button
28. Volume Buttons

■ Speaker section



1. Tweeter
2. Woofer
3. Bass Reflex Duct
4. Speaker Terminals

SETTING THE CLOCK

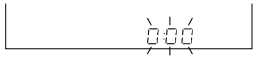


● In this example, the clock is set for the 24-hour (0:00) system.

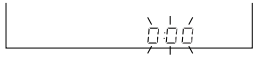
1 Press the ON/STAND-BY button to turn the power on.

2 Press the CLOCK button.

3 Within 5 seconds, press the MEMORY/ENTER button.



4 Turn the jog dial to select the time display mode.



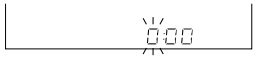
"0:00" →The 24-hour display will appear. (0:00 - 23:59)

"12:00 AM" →The 12-hour display will appear. (AM or PM 12:00 - 11:59)

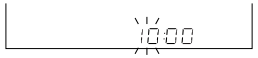
"0:00 AM" →The 12-hour display will appear. (AM or PM 0:00 - 11:59)

● Note that this can only be set when the unit is first installed or it has been reset.

5 Press the MEMORY/ENTER button.



6 Adjust the hour by turning the jog dial.



● When the jog dial is turned one click clockwise, the time will increase by 1 hour. When it is turned one click anti-clockwise, the time will decrease by 1 hour. Keep turning the jog dial to change the time continuously.

● When the 12-hour display is selected, "AM" will change to "PM" automatically.

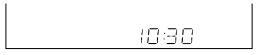
7 Press the MEMORY/ENTER button.

8 Adjust the minutes by turning the jog dial.

● When the jog dial is turned one click clockwise, the time will increase by 1 minute. When it is turned one click anti-clockwise, the time will decrease by 1 minute. Keep turning the jog dial to change the time continuously.

● The hour setting will not advance even if minutes advance from "59" to "00".

9 Press the MEMORY/ENTER button.



● The clock starts operating from "0" second. (Seconds are not displayed.)

To see the time display:

Press the CLOCK button.

● The time display will appear for about 5 seconds even in the stand-by mode.

Note:

● The "CLOCK" will appear at the push of the CLOCK button when the AC power supply is restored after a power failure occurs or after the AC power lead is disconnected.
If this happens, follow the procedure below to change the clock time.

To change the clock time:

1 Press the CLOCK button.

2 Within 5 seconds, press the MEMORY/ENTER button.

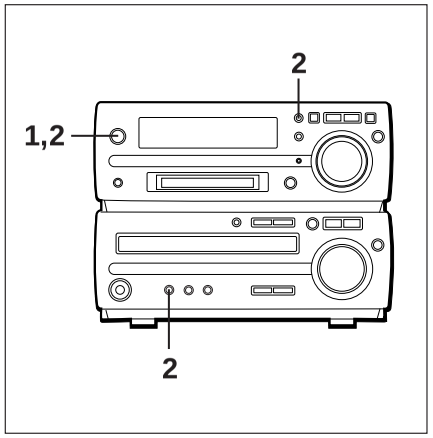
3 Perform steps 6 - 9 above.

To change the time display mode:

1 Reset the microcomputer.

2 Perform steps 2 - 9 above.

RESETTING THE MICROCOMPUTER



If this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction or the display may not function correctly. If such a problem occurs, do the following:

1 Press the ON/STAND-BY button to enter the stand-by mode.

2 Press the ON/STAND-BY button whilst holding down the SURROUND button and the TIMER/DELETE button.

● "ALL CLEAR" will appear.

Caution:

● The operation explained above will erase all data stored in memory including clock and timer settings, and tuner, MiniDisc and CD presets.

TROUBLESHOOTING

■ If a problem occurs

If this unit functions abnormally during operation, first check the following items. If the unit continues to function abnormally, or if an abnormality appears other than listed below, set this unit to the stand-by mode and disconnect the AC power plug, then consult your SHARP dealer or service personnel.

General

Symptom	Possible cause	Remedy
● The clock is wrong.	● Did a power failure occur?	● Try setting it again.
● When a button is pressed, the unit does not respond.	———	● Set this unit to the stand-by mode and then turn it back on. Then, retry the operation.
● No sound is heard.	● Is the volume level is set to "0"? ● Are the headphones connected? ● Are the speaker wires disconnected?	● Increase the volume level. ● Disconnect the headphones. ● Connect the wires securely.
● Radios make unusual noise or the picture on the TV screen is distorted.	● When a radio or TV which uses an indoor aerial is placed near the unit, the picture on the TV screen may be distorted or the radio may not function properly.	● It is recommended that you use an external aerial.

(Continued)

CD Playback

Symptom	Possible cause	Remedy
● Even though a disc has been loaded, "NO DISC" is displayed. ● Playback stops in the middle of a track, or playback is not performed properly. ● Playback sounds are skipped.	● The disc is loaded up-side down. ● The disc is very dirty. ● The disc which does not satisfy the standards. ● Is the unit located near excessive vibrations? ● Has condensation formed inside the unit?	● Load the disc with the correct side up. ● Clean the disc. ● Load the correct disc. ● Place the unit on a firm, level surface free from vibration. ● Remove the disc and leave the power turned on. The unit should function properly in about 1 hour.

MiniDisc recording and playback

Symptom	Possible cause	Remedy
● A recording cannot be made.	● Is the MiniDisc protected against accidental erasure? ● Did you try to make recording on a playback-only MiniDisc? ● Can you see the "DISC FULL" or "TOC FULL" message in the display?	● Slide the accidental erase prevention tab back to its original position. ● Replace it with a recordable disc. ● Put in another recordable disc with recording space on it.
● Even though a disc has been loaded, "NO DISC" or "CAN'T READ" is displayed. ● Playback sounds are skipped.	● The disc is very dirty. ● Is the unit located near excessive vibrations? ● Has condensation formed inside the unit?	● Clean the disc. ● Place the unit on a firm, level surface free from vibration. ● Remove the disc and leave the power turned on. The unit should function properly in about 1 hour.

Radio reception

Symptom	Possible cause	Remedy
● Radios make unusual noise consecutively.	● The unit is placed near the TV or computer. ● The aerial direction is not placed properly.	● When the unit receives a radio broadcast near a TV set, a computer or a word-processor, it may pick up noise. If this happens, move the unit from the place where the noise is picked up. ● Correct the aerial direction.
● The preset channel cannot be recalled.	● Did you erase the programmed station?	● Preset the channel again. ● Redo programming.

Remote control

Symptom	Possible cause	Remedy
● The remote control does not function or does not operate properly.	● The batteries (polarity) are not inserted properly. ● The batteries inside the remote control are dead. ● The remote control is operated from an incorrect distance or angle.	● Insert properly. ● Replace the batteries. ● Operate it within a range of 0.2 m (8") to 6 m (20') and within an angle of 15 ° to either side of centre.
● The power cannot be turned on from the remote control.	● Is the AC power lead plugged in?	● Connect the AC power lead.

ERROR MESSAGES

When an error message is displayed, proceed as follows:

Error messages	Meaning	Remedy
BLANK MD	● Nothing is recorded. (Neither music nor disc name is recorded.)	● Replace it with another disc.
CAN'T COPY	● You tried to record from a copy prohibited CD.	● Replace the CD.
CAN'T READ ✳ (✳ :Number or symbol)	● The disc is damaged. ● TOC information cannot be read. ● MiniDisc not specified.	● Replace it with another disc. ● Erase the disc and try recording again.
CAN'T EDIT	● A track cannot be edited.	● Change the stop position of the track and then try editing it.
CAN'T REC	● Recording cannot be performed correctly due to vibration or shock in the unit.	● Re-record or replace the MiniDisc.
CAN'T WRITE	● The TOC information could not be created properly due to a mechanical shock or to scratches on the disc.	● Set this unit to the stand-by mode and try to write the TOC again. (Remove any source of shock or vibration whilst writing.)
DISC FULL	● The disc is out of recording space.	● Replace the disc with another recordable disc.
E-CD 20	● The CD tray is not working properly.	● Set this unit to the stand-by mode and turn the power on again.
E. OVER	● You chose 21 or more tracks for track editing.	● Decrease the number of tracks.
EDIT OVER	● There is no space to make CD editing on the disc.	● Replace it with a disc that has enough time to record.
Er-MD ✳✳ (✳ :Number or symbol)	● A MiniDisc is not working properly.	● Set this unit to the stand-by mode and turn the power on again.
NAME FULL	● The number of characters for the disc name or track name exceeds 40.	● Shorten the disc or track name.
NO DISC	● A MiniDisc has not been loaded. ● The MiniDisc data cannot be read. ● A CD has not been loaded. ● The CD data cannot be read.	● Load a MiniDisc. ● Reload the MiniDisc. ● Load a CD. ● Reload the CD.
NOT AUDIO	● The data recorded on this disc is not audio data.	● Select another track. ● Replace the disc.
PLAY MD	● You tried to record on a playback-only disc.	● Replace it with another recordable disc.
PROTECTED	● The disc is write protected.	● Move the write protection tab back to its original position.
TEMP OVER	● The temperature is too high.	● Set this unit to the stand-by mode and wait for a while.
TOC FORM ✳✳ (✳ :Number or symbol)	● TOC information recorded on the MD does not match the MiniDisc specifications or it cannot be read.	● Replace it with another disc. ● Erase the disc and try recording again.
TOC FULL	● There is no space left for recording track numbers.	● Replace it with another recordable disc.
TOC FULL 1	● There is no space left for recording character information.	● Replace it with another recordable disc. ● Erase the needless characters.
? DISC	● The data contains an error. ● MiniDisc not specified.	● Replace it with another disc.

DISASSEMBLY

Caution on Disassembly

The disassembling the machine or assembling it after repair, observe the following instructions to ensure safety and keep its performance.

1. Unload the compact disc, and mini-disc, cassette tape from machine.
2. Be sure to unplug the power cable before starting disassembly of the machine.
3. When disassembling each section, remove the nylon band or wire arrangement.
   After servicing the unit, be sure to rearrange the leads where they were before disassembling.
   If a screw of improper length is fit to the MD mechanism. (A screw fit the part to the mechanism chassis of MD section), it may contact the optical pickup, impeding normal operation. Hence, due care must be taken.
4. While repairing, pay utmost attention to static electricity on ICs.

MAIN UNIT

STEP	REMOVAL	PROCEDURE	FIGURE
1	Top Cabinet	1. Screw ..... (A1) x7	10-2
2	Side Panel (Right,Left)	1. Screw ..... (B1) x8	10-2
3	Rear Panel	1. Socket ..... (C1) x1 2. Screw ..... (C2) x6	10-3
4	Main PWB (Note 1)	1. Screw ..... (D1) x9 2. Flat Cable ..... (D2) x4 3. Socket ..... (D3) x3	11-1
5	Tuner PWB	1. Screw ..... (E1) x4	11-1
6	Power PWBx2	1. Socket ..... (F1) x1 2. Screw ..... (F2) x9	11-2
7	MD/CD Holder	1. Screw ..... (G1) x8 2. Flat Cable ..... (G2) x1	11-3
8	Front Panel	1. Screw ..... (H1) x4	11-4
9	Volume PWB	1. Knob ..... (J1) x1 2. Screw ..... (J2) x3 3.Nut ..... (J3) x1	11-5
10	Display PWB	1. Knob ..... (K1) x1 2. Nut ..... (K2) x1 3. Screw ..... (K3) x8	11-5
11	CD Servo PWB (Note 1)	1. Socket ..... (L1) x5 2. Lug ..... (L2) x1 3. Screw ..... (L3) x3	11-6
12	MD Holder (MD Unit)	1. Screw ..... (M1) x3 2. Screw ..... (M2) x4	11-6
13	CD Mechanism	1. Screw ..... (N1) x3	11-7
14	MD Mechanism (Note 1)	1. Screw ..... (P1) x8 2. Flat Cable ..... (P2) x3 3. Flexible PWB .... (P3) x1 4. Socket ..... (P1) x2	12-1

Note 1:

After removing the connector for the optical pickup from the connector wrap the conductive aluminium foil around the front end of connector so as to protect the optical pickup from electrostatic damage.

Notes for servicing (For MD-MX30 only)

- This model is equipped with a fan. If you remove the fan to service the unit, it enters the protection mode and the power cannot be turned on by pressing the POWER button. In such a case, follow the procedure below. (Refer to Fig.10-1.)

1. Check whether a resistor (RV 66,39ohm,1/2W) is inserted. If not, connect it (39ohm,1/2W).
2. Connect the patterns circled with a dotted line by soldering.

- Desolder to reassemble the unit after repairing. If you fail to desolder, the power turns off soon because the unit enters the protection mode when the fan rotates at a high speed (high power).

- These steps are unnecessary to service the unit with the fan connected.

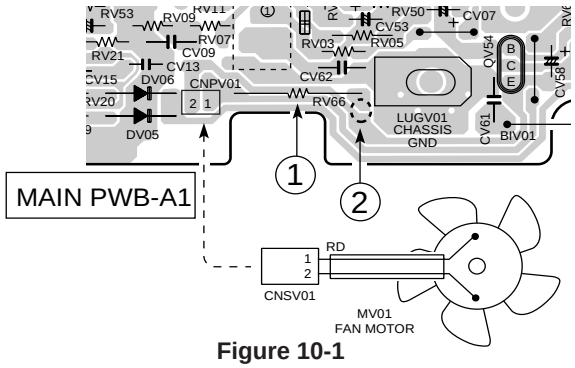


Figure 10-1

MAIN UNIT **Illustration: MD-MX30**

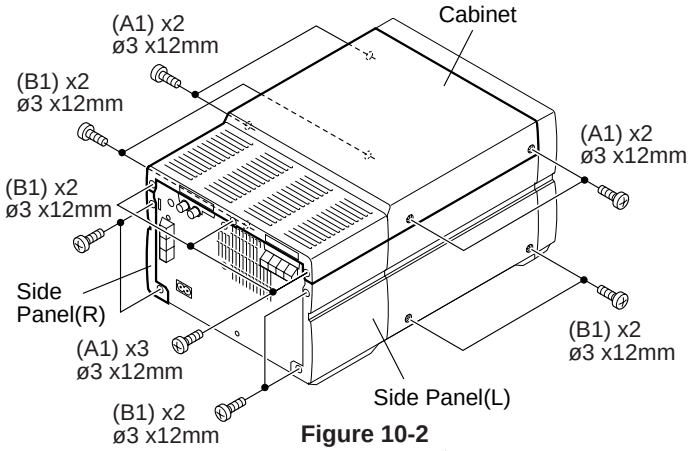


Figure 10-2

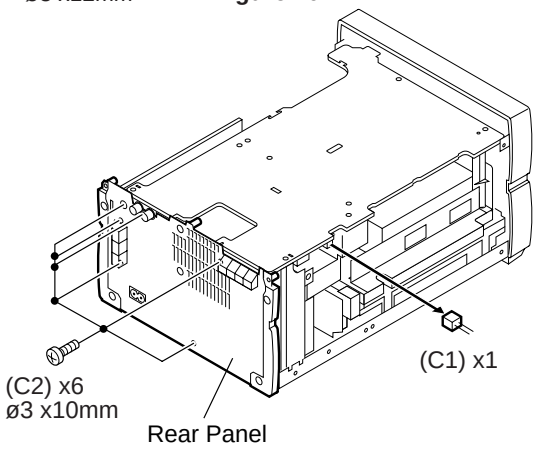


Figure 10-3

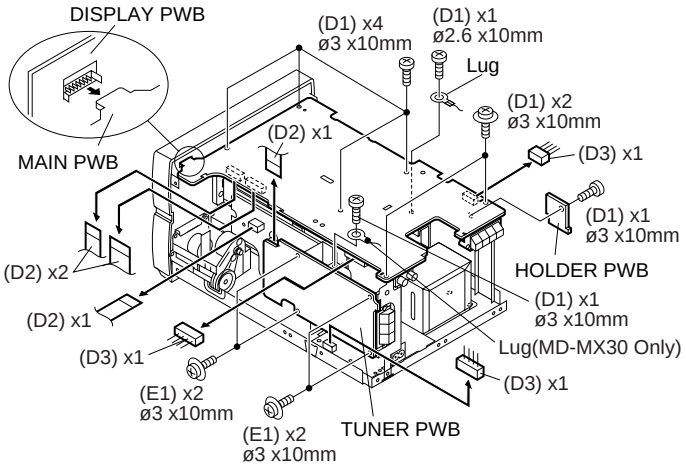


Figure 11-1

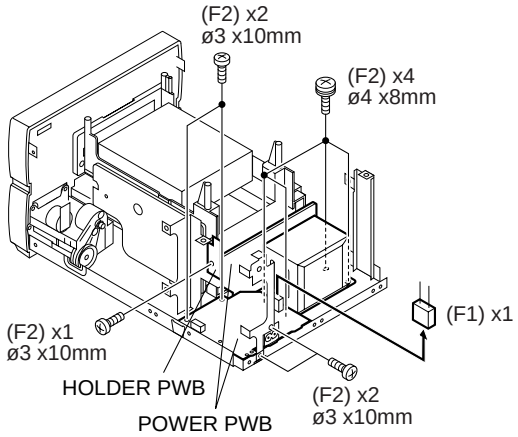


Figure 11-2

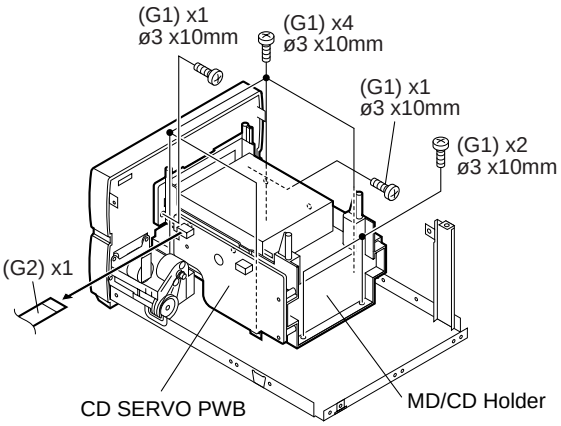


Figure 11-3

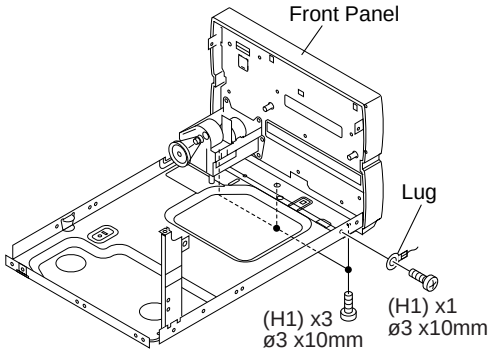


Figure 11-4

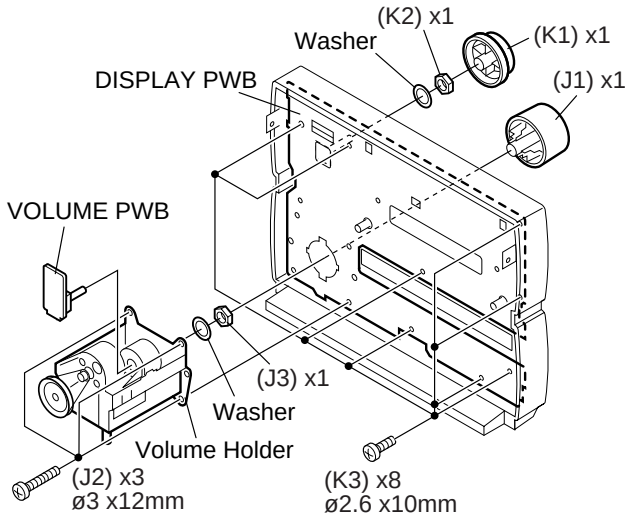


Figure 11-5

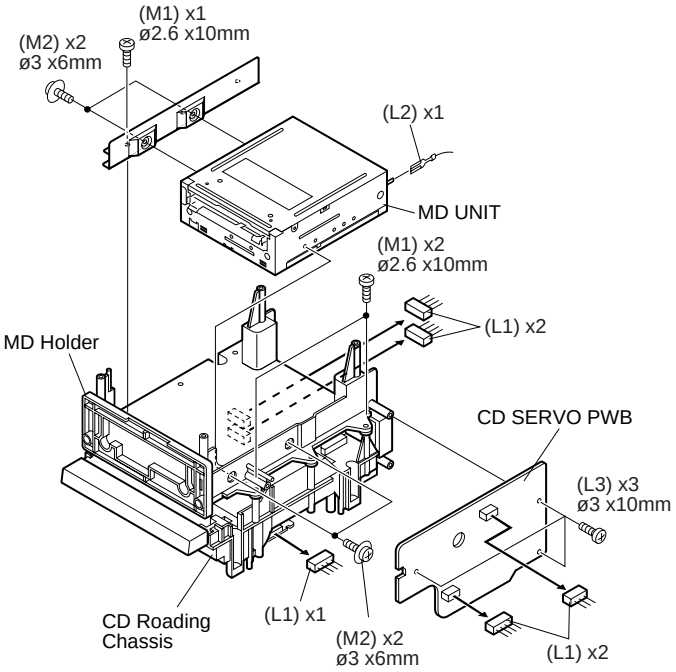


Figure 11-6

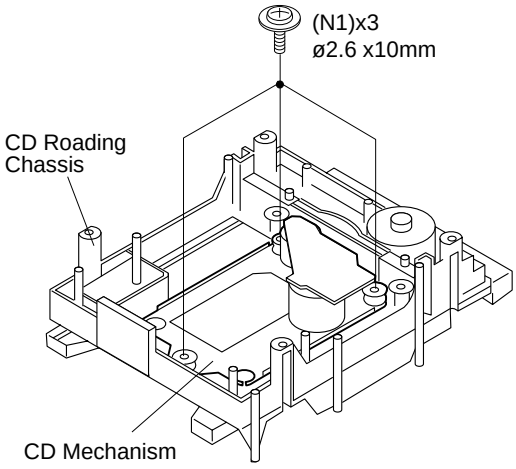
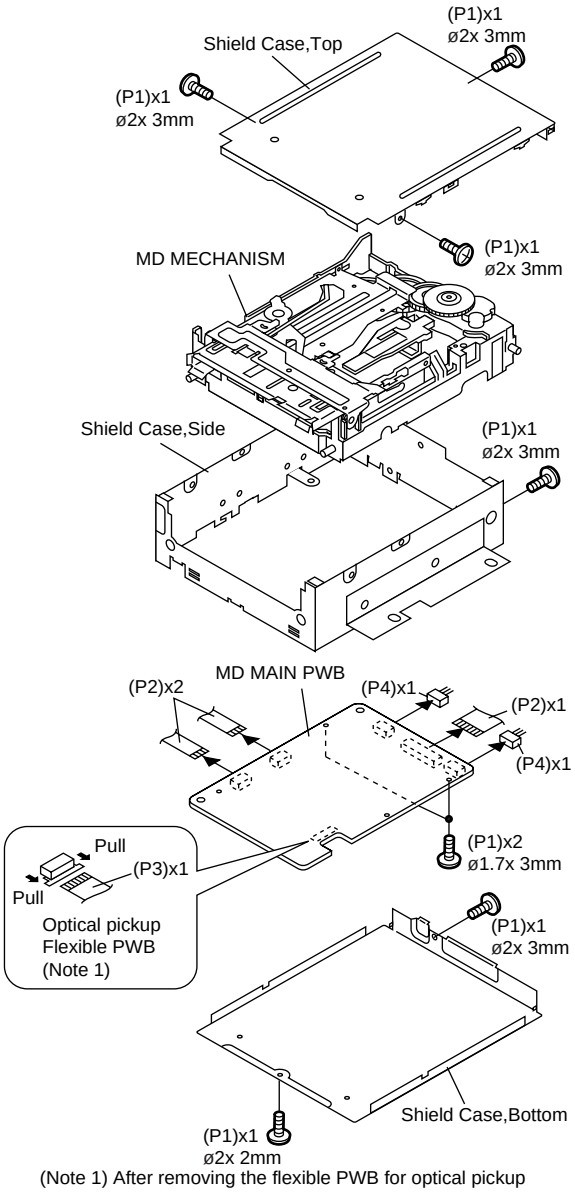


Figure 11-7



(Note 1) After removing the flexible PWB for optical pickup from the connector wrap the front end of flexible PWB in conductive aluminum foil so as to protect the optical pickup from being damaged electrostatically.

Figure 12-1

SPEAKER			
STEP	**REMOVAL**	**PROCEDURE**	**FIGURE**
1	Net Frame Woofer Tweeter	1. Net ..... (A1) x1 2. Screw ..... (A2) x4 3. Screw ..... (A3) x6	12-2 12-3

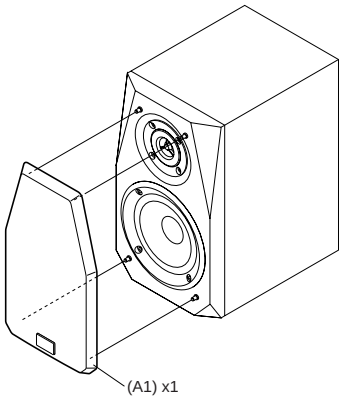


Figure 12-2

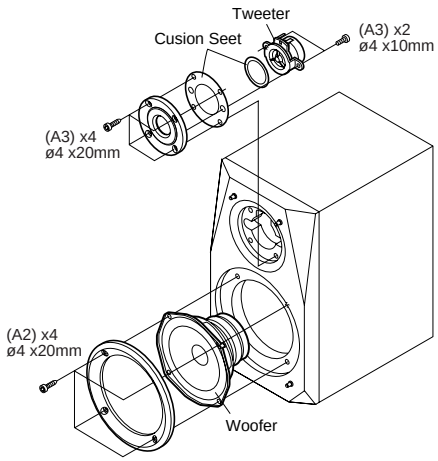


Figure 12-3

REMOVING AND REINSTALLING THE MAIN PARTS

MD MECHANISM SECTION

For details about the procedure to remove the MD mechanism from the main unit, refer to the Disassembly Procedure, Steps 1-4,12 and 14 in the main unit and also the MD section. (Referring to p.10-12)

Caution:

After pulling out the optical pickup connector, wrap the end of the connector in conductive aluminium foil to prevent the optical pickup from being destroyed by static electricity.

How to remove the magnetic head (See Fig. 12-4)

1. Remove the screws (A1) x 1 pc.

Caution:

Take utmost care so that the magnetic head is not damaged when it is mounted.

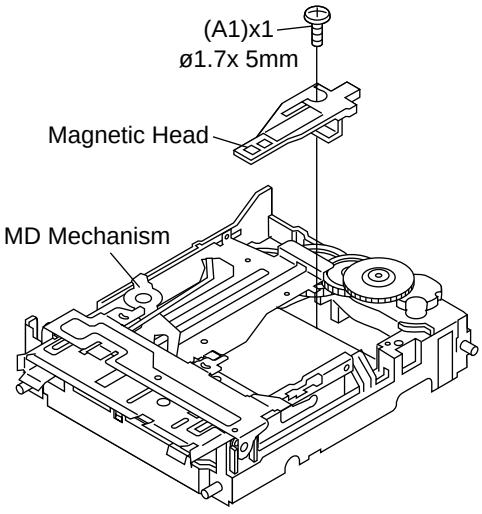


Figure 12-4

How to remove the MD loading PWB/loadeing motor (See Fig. 13-1)

1. Remove the screw (B1) x 1 pc.
2. Remove the Hoock (B2) x 3 pcs., and remove the MD Loading PWB.
3. Remove the screw (B3) x 2 pcs., and remove the Loading motor.

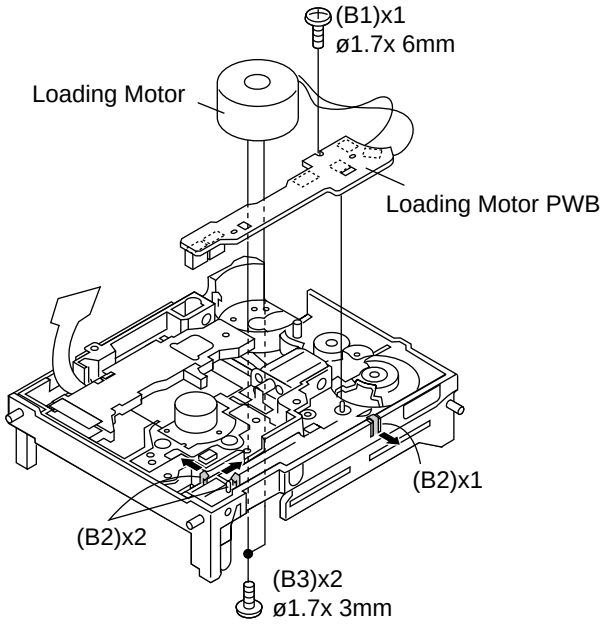


Figure 13-1

How to remove the sled motor/optical pickup (See Fig. 13-2)

1. Remove the screws (C1) x 3 pcs., and remove the sled motor.
2. Remove the optical pickup.

Caution:

Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

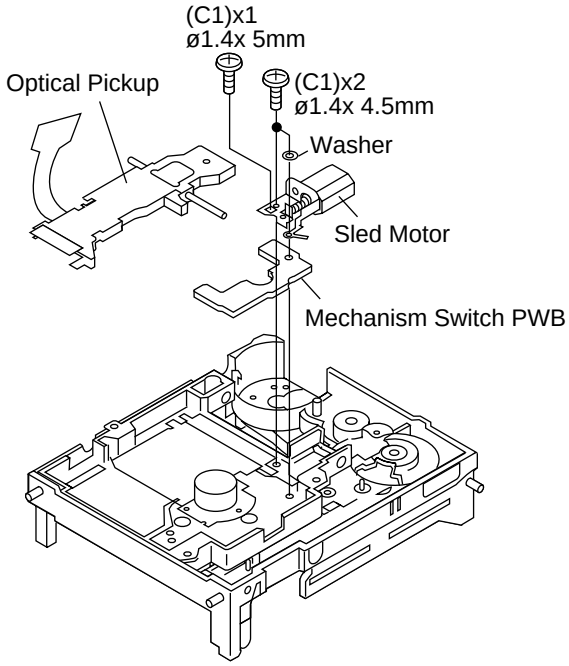


Figure 13-2

How to remove the spindle motor (See Fig. 13-3)

1. Remove the screws (D1) x 3 pcs., and remove the spindle motor.

Caution:

Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

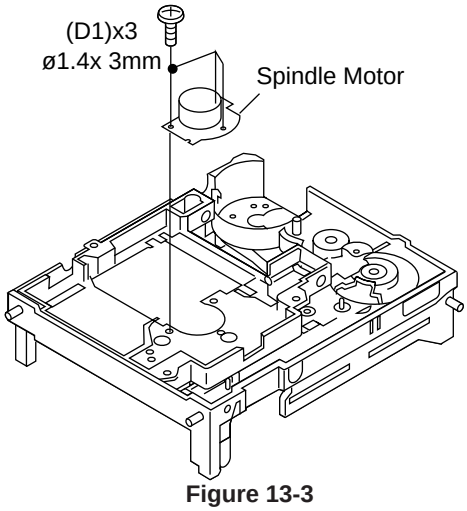


Figure 13-3

CD MECHANISM SECTION

For details about the procedure to remove the CD mechanism from the main unit, refer to Disassembly Procedure, Steps 1-4 ,7 and 11-13 in the main unit and also the CD section. (p.10,11).

How to remove the optical pickup (See Fig. 14-1.)

1. Remove the screws (A1)x 2 pcs., to remove shaft (A2)x 1 pc.
2. Remove the stop washer (A3)x 1 pc., to remove the gear (A4)x 1 pc.
3. Remove the optical pickup.

Note:

After disconnecting the optical pickup connector wrap the front end of connector in conductive aluminium foil to prevent damage to the optical pickup by static electricity.

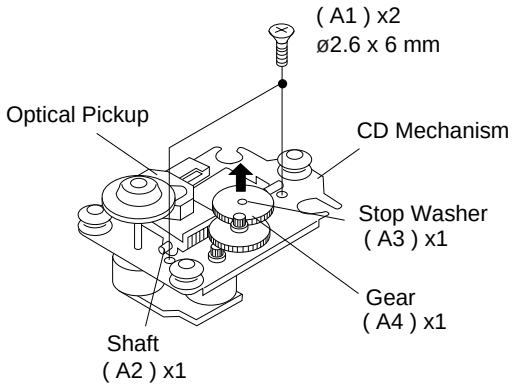


Figure 14-1

How to remove the CD loading motor (See Fig. 14-2.)

1. Remove the belt (B1)x 1 pc.
2. Remove the screws (B2)x 2 pcs.,and remove the Loading motor.

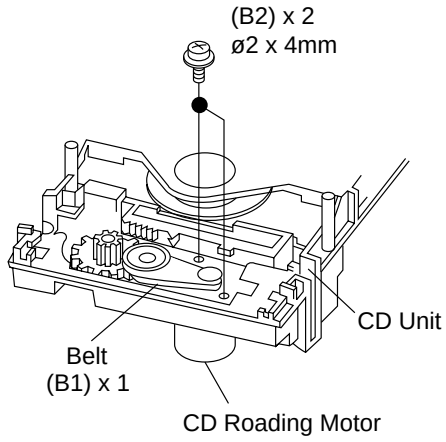


Figure 14-2

How to remove the disc tray (See Fig. 14-3/4 .)

1. Rotate the disc tray gear in the direction of the arrow (1). Pull out the disc tray as shown by the arrow (2).
2. Press the right and left claws as shown by the arrow (3) to remove the disc tray.

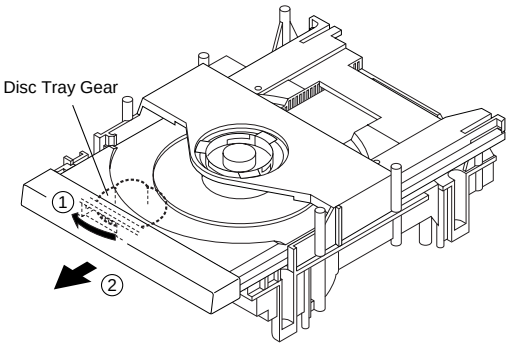


Figure 14-3

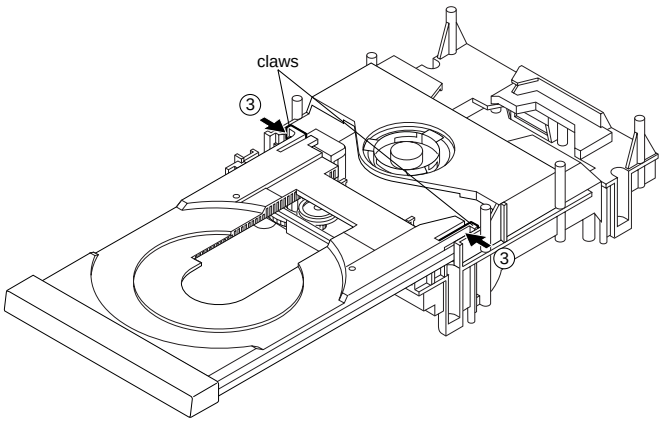


Figure 14-4

TEST MODE

Press specified buttons simultaneously to enter the following test modes.

System section

TEST 1: Factory setting (version number and destination)
TEST 2: Soft reset

MD section

TEST 3: MD test 1 (adjustment, test, etc.)

CD section

TEST 4: CD test

Tuner section

TEST 5: Tuner test frequency preset
TEST 6: Tuner preset clear

Entering the test mode

While holding down the following 2 buttons, press the ON/STAND-BY button to enter each test mode.

	Name	Level meter "Center Bar"	Description	Button1	Button2
TEST1	Factory setting	–	Setting the unit to default.	[SURROUND]	[ENTER]
TEST2	Soft reset	–	Reinitializing the unit.	[SURROUND]	[DELETE]
TEST3	MD test 1	Flashing	Setting MD microcomputer to test mode	[SURROUND]	[MD-PLAY]
TEST4	CD test	Flashing	Testing CD mechanism, hard	[X-BASS]	[>>]
TEST5	Tuner test Frequency preset	–	Presetting test frequency	[TUNER]	[MD-PLAY]
TEST6	Tuner preset clear	–	Clearing all preset settings	[TUNER]	[MD-STOP]

Table 15-1 Test mode entry

■ System section

TEST 1 Factory setting test mode

Object: Putting the unit in default state.
Function: Checking existence of CD and MD and reinitializing all functions.
Operation: The unit performs CD initial operation and checks existence of CD.
If a CD exists, "CD OPEN" appears and tray opens in CD mode then the unit enters the normal power-on state.

Ejecting MD
While disc existence check, program version and preset destination appear according to the display.

When disc existence check is completed, the unit reinitializes all settings and displays "FINISH" according to the display and prohibits every button input including power supply operation.

Leaving the test mode

The unit returns to normal operation by connecting and disconnecting the power supply cord.

Item	Type	Character display													Remarks
		Sub-display	1	2	3	4	5	6	7	8	:	9	10	Sub-display	
Version and destination display			V		*	·	*	*		H	:				
					Number										
CD presence	Operation		C	D		O	P	E	N						
Setting end	Function		F	I	N	I	S	H							

Table 15-2 Character display

Destination is displayed by its name.

TEST 2 Soft reset

Object: Reinitializing the unit.
Function: Reinitializing all functions.
Operation: "ALL CLEAR" appears and the unit reinitializes all functions and then turns power on.

Leaving the test mode

After reinitializing by soft reset, the unit enters the normal power-on state.

Item	Type	Character display												Remarks
		Sub-display	1	2	3	4	5	6	7	8	:	9	10	Sub-display	
Reset operation display	Operation		A	L	L		C	L	E	A		R			

Table 16-1 Character display

■ MD section

TEST 3 MD test 1

Object: Setting the MD unit to test mode.
Function: Setting the MD microcomputer to test mode, sending test commands which correspond to the button entry, and displaying indication data from the microcomputer.
Operation: Power turns on and the mode is switched to MD by entering the test mode.

The test mode setting command is sent to the MD microcomputer to enter the test mode.

Button entries not in theTable 17 (page 17) are ignored.

10 characters data received from the MD microcomputer are displayed.

EJECT and LOADING are operated normally.
Disc can be loaded or unloaded forcibly by VOLUME up and down operations while MD microcomputer version is displayed in disc chucking and while EJECT is displayed.

Leaving the test mode

Pressing the ON/STAND-BY button turns the power off normally.

No auto adjustment mode setting

While in this test mode, pressing the MEMORY/ENTER button switches the unit to the no auto adjustment operation mode as follows.

The unit enters the no auto adjustment operation mode after the above. As normal operation, every button input is valid.

While this setting, "Center bar" should flash. The unit is in the test mode continuously.

Note:

In no auto adjustment operation mode, the mode is canceled by pressing the ON/STAND-BY button. When power turns on again, normal power-on operation is performed.

Button to press			Press	Function
	Main unit	Remote control		
[ON/STAND-BY]	○	○	Once	Power on and off. Turns the power off when POWER ON and on when POWER OFF.
[EQUALIZER]	○	○	Once	Sending test mode menus. To servo adjustment mode. (Menus concerning adjustment and EEPROM.)
[X-BASS]	○	○	Once	Sending test mode menus. To recording mode. (Menus concerning continuous playback and continuous recording.)
[CD-PLAY]	○	○	Once	Sending test mode menus. To other modes. (INNER mode menu, JUMP SELECT menu, etc.)
[CD-STOP]	○	○	Once	Sending menus backward in each mode. (Valid in each test mode.)
[MD-PLAY]	○	○	Once	Menu selection and execution.
[MD-STOP]	○	○	Once	Stopping each test item and returning to the previous selection menu.
[UP]	○	○	Once Continuously	1) Sled motor moving outward (FWD) and continuation. 2) JUMP. 3) Address value UP. Others
[DOWN]	○	○	Once Continuously	1) Slide motor moving inward (REV) and continuation. 2) JUMP. 3) Address value DOWN. Others
[VOLUME UP]	○		—	1) Forcibly disc unloading. 2) Adjustment value + 1.
[VOLUME DOWN]	○		—	1) Forcibly disc loading. 2) Adjustment value - 1.
[DISPLAY]	○	○	Once	1) Laser switching at "EJECT". 2) Display switching when continuous playback. Others
[MEMORY/ENTER]	○	○	Once	To the no auto adjustment operation mode.
LOADING SW	○		—	Normal loading.
[EJECT]	○		Once	Normal eject.

Table 17 Button entry table

Display in the MD test mode 1

"Center Bar" of the level meter flashes during this mode.
Lower-case characters appear according to the 10-letter data from the MD microcomputer.

When an MD disc is already loaded: "_AUT_YOBI_" appears.

The entry to this mode becomes steady when the indication appears as the AUTO YOBI mode Figure 17-1

"_AUTO_YOBI_" indication when entering MD test mode

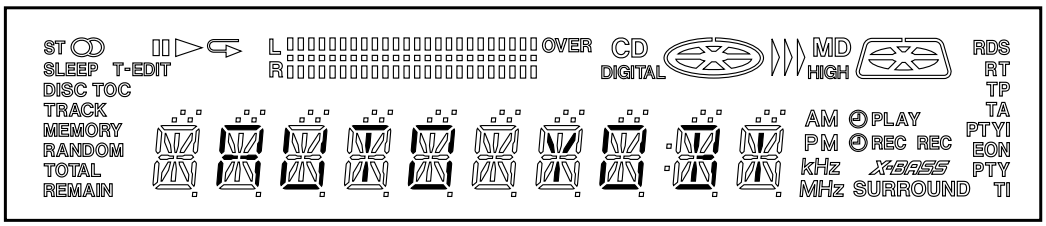


Figure 17-1

When an MD is not loaded: "_EJECT_" appears.

Indication appears as shown in Figure 18-1 when a disc is not loaded.

When a disc is loaded, the MD microcomputer enters the AUTO YOBI mode. The received character data will be displayed as Figure 17-1 (page 17).

"_EJECT_" indication when entering the MD test mode

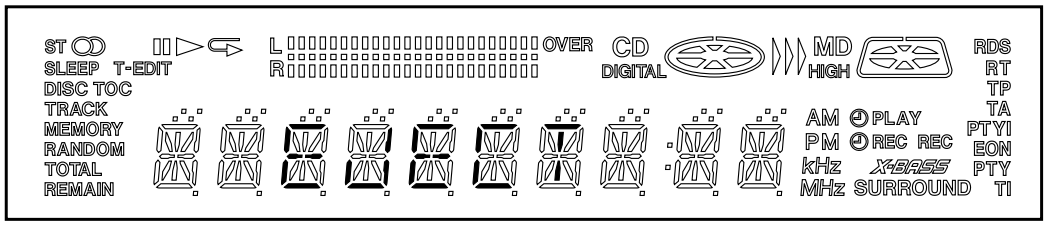


Figure 18-1

Indication when moving to the normal power-off mode in the no auto adjustment mode.

When the MEMORY/ENTER button is pressed in this mode, the unit leaves this test mode and becomes normal power-on state in the no auto adjustment mode.(This mode is used for technical consideration, not for service.)

After displaying "POWER ON", "MD DISC" (Figure 18-2) appears then the normal power-on indication appears.

"MD DISC" display

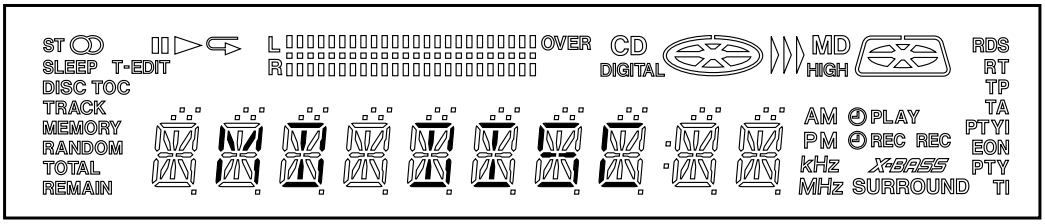


Figure 18-2

■ CD section

TEST 4 CD test mode

When focus is not correct in step 3 or when entering other error correction modes, the unit cannot move to the next step.
When the unit enters error correction mode, press the ON/STAND-BY button to stop the test mode or the CD-STOP button to return to step 1. Other operations are prohibited.

Press the ON/STAND-BY button in each step to cancel the test mode and return to the normal POWER OFF.

CD test mode flow chart

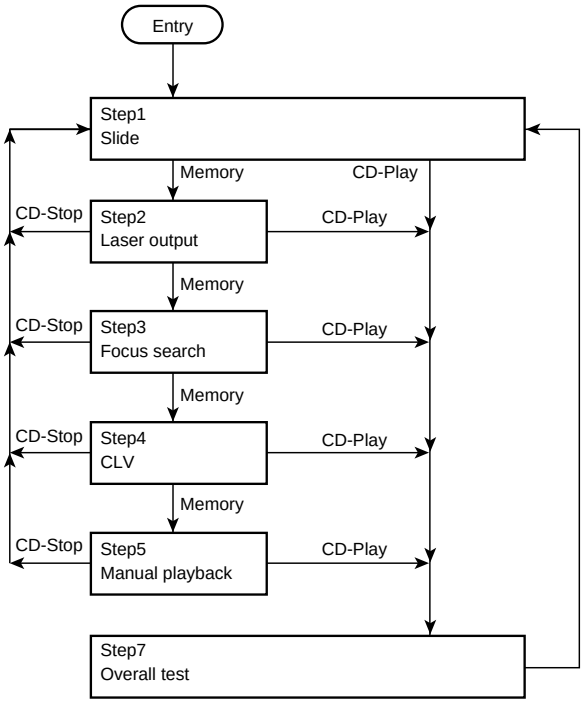


Table 18

■ Tuner section

Pressing the specified buttons performs the following 3 test operations.
The operations are performed when POWER ON. When they are completed, the unit enters the normal power-on operation state.

TEST 5 Tuner test frequency preset

Object: Presetting the test frequency for factory test.
Function: Presetting bands and frequencies shown in the Table 19 to each preset number according to the destination default.
Operation: The bands and frequencies shown in the table are preset by entering test mode and power turns on in the following state.

Function:	Tuner
Band:	FM monaural
Tuning mode:	Preset call tuning
Call preset number:	Frequency of preset number 1
Each band last preset channel:	Refer to Table 19
X-BASS:	OFF
Preset equalizer:	FLAT
Surround:	OFF

Others are set to the previous power-off setting (the last state).

Leaving the test mode

When frequency is preset in the specified state, the unit turns on normally and returns to the normal operation state.

MD-MX30

FM					AM				
1	2	3	4	5	6	7	8	9	10
87.5MHz	108.0MHz	90.0MHz	106.0MHz	98.0MHz	530kHz	1720kHz	600kHz	1400kHz	990kHz

MD-MX30W

FM					AM				
1	2	3	4	5	6	7	8	9	10
87.5MHz	108.0MHz	90.0MHz	106.0MHz	98.0MHz	531kHz	1602kHz	603kHz	1404kHz	990kHz

Table 19 TEST_TuSet preset frequency table

All FM bands are preset to FM monaural.

TEST 6 Tuner preset clear test

Object: Clearing all presetttings.
This function is opened to the users in the operation manual.
Function: Canceling all presettings.
Operation: "PRESET CL" appears by entering test mode. All tuner preset memories are cleared. Last preset information, etc. for each band are also returned to initial state and all presettings are cleared. The unit changes the last settings of the following items and enters the normal power-on state.

Function:	Tuner
Band:	FM-Stereo
Frequency:	Minimum receiving frequency

Others are set to the previous power-off setting (the last state).

Leaving the test mode

Clearing presets are completed and POWER ON in the specified state. Then, the unit returns to the normal operation state.

Preset clear display

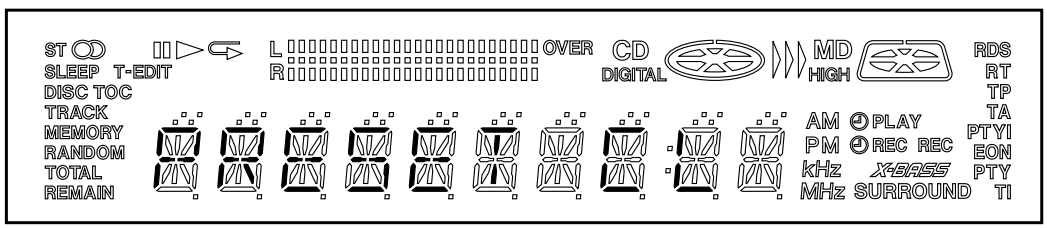


Figure 19-1

ADJUSTMENT

TUNER SECTION

fL: Low-range frequency
fH: High-range frequency
fC: Center-range frequency

• AM adjustment and confirmation

AM signal oscillator Frequency 400 Hz, 30%, AM modulation

MD-MX30

Adjusting item	Adjusting object	Adjusting method
IF	Adjust the indication of T351 set to 1,720 kHz.	Set IF waveform 450 kHz to maximum.
Frequency cover (VT line voltage of TP301)	fL: T306 (530 kHz) Adjust the indication of set to 530 kHz. fH: (1,720 kHz)	fL: 1.3 ± 0.1 V fH: 8.5 ± 1.3 V (Only confirmation)
Tracking	fC: T302 (990 kHz)	Set the output of speaker terminal to maximum.

MD-MX30W

Adjusting item	Adjusting object	Adjusting method
IF	Adjust the indication of T351 set to 1,620 kHz.	Set IF waveform 450 kHz to maximum.
Frequency cover (VT line voltage of TP301)	fL: T306 (522 kHz) Adjust the indication of set to 522 kHz. fH: (1,620 kHz)	fL: 1.3 ± 0.1 V fH: 8.5 ± 1.3 V (Only confirmation)
Tracking	fC: T302 (990 kHz)	Set the output of speaker terminal to maximum.

• FM mute level adjustment

MD-MX30:

FM signal oscillator Frequency 1 kHz, 67.5 kHz dev.

MD-MX30W:

FM signal oscillator Frequency 1 kHz, 40 kHz dev.

Frequency	Adjusting method	Adjusting object	Adjusting object
98 MHz	26 dB(EMF)	VR351	Input: SO301B Output: Speaker Terminal

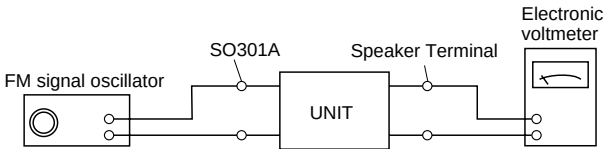


Figure 20-2 FM Mute Level

• Erasing the registered broadcast station

When the power is off, press and hold the TUNER(BAND) button and the MD STOP button, and then press the ON/STAND-BY button.
All the registered stations are erased.

• Setting the Test Mode

While holding down the TUNER(BAND) button and the MD PLAY button, press the ON/STAND-BY button. Frequencies are rewritten in memory as shown in table 18. Call them using the JOG DIAL for tuner circuit adjustment and check.
Note that once you reinitialize the settings, the frequencies recorded by users will be changed.

Preset No.	Frequency	Preset No.	Frequency (MD-MX30)	Frequency (MD-MX30W)
P01	87.5 MHz	P06	530 kHz	531 kHz
P02	108.0 MHz	P07	1,720 kHz	1,602 kHz
P03	90.0 MHz	P08	600 kHz	603 kHz
P04	106.0 MHz	P09	1,400 kHz	1,404 kHz
P05	98.0 MHz	P10	990 kHz	990 kHz

Table 20

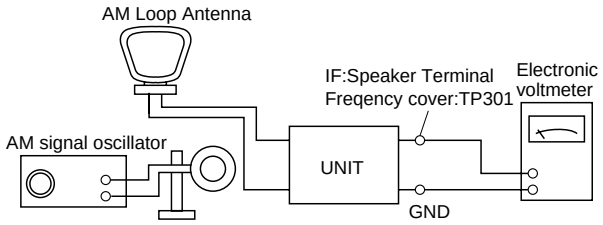


Figure 20-1 AM IF/Frequency Cover

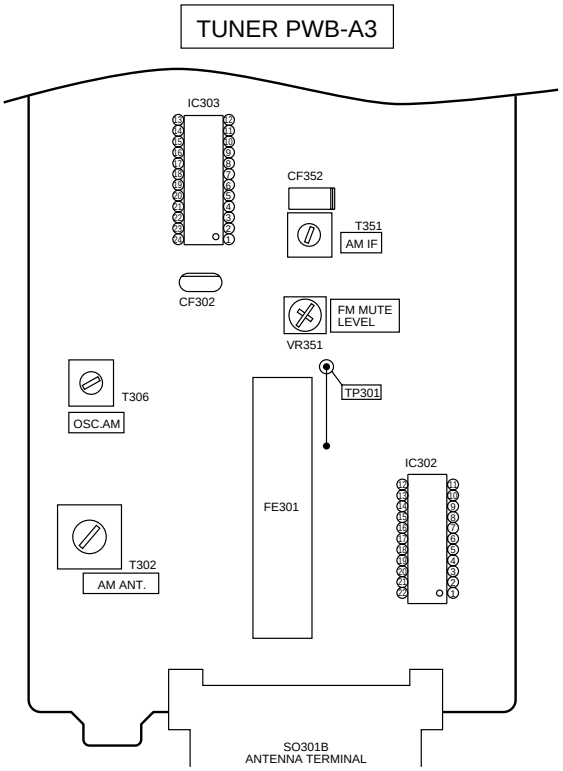


Figure 20-3 ADJUSTMENT POINT

CD SECTION

• Adjustment

Since this CD system incorporates the automatic adjustment functions, readjustment is not needed when replacing the pickup. Therefore, PWBs and pickups can be combined freely.
Each time a disc is changed, automatic adjustment is performed. Therefore, playback of each disc can be performed under optimum conditions.

MD SECTION

Enter the test mode, adjust or set as shown in the following table according to the repair operations.

Execution item required / Repair operations	TEMP basic setting	Checking EEPROM setting	Writing the EEPROM setting	AUTO-YOBI adjustment	AUTO-adjustment	AUTO-FAB adjustment	Writing the EEPROM setting	Operation check	
	TEMP	EEPROM_SET	TEST-CANCEL	AUTO–YOBI	AUTO–ADJ	AUTO–FAB	TEST-CANCEL	TEST-PLAY	TEST-REC
PICK replacement	—	①	②	③	④	⑤	⑥	⑦	⑧
HEAD replacement	—	—	—	—	—	—	—	—	①
MECHANISM replacement	—	①	②	③	④	⑤	⑥	⑦	⑧
MAIN PWB assembly replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨
MD microcomputer replacement	—	①	—	—	—	②	③	④	⑤
MD LSI replacement	—	—		①	②	③	④	⑤	⑥
RF IC replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨
EEPROM IC replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨

number ① to ⑧ and ⑨ indicate the order of inplementation.

" – " is an item that you don't have to execute.

The EEPROM writing result is shown at the end of the test mode

OK_EEPROM: "SET" and "YOBI COMPLETE" were written normally

WR_EEPROM: Although "SET" was written normally, it was not written in the "YOBI COMPLETE" state.

→ Peform "AUTO-YOBI" adjustment.
After making a normal adjustment, write the preliminary adjustment into the EEPROM.

NG_EEPROM: "SET" could not be written.

→ Check the connection between the MD microcomputer and the EEPROM.

1. Preparation for adjustment Test disc

	Type	Test disc	Part No.
1	High reflection disc	TGYS1 (SONY) [for Playback]	RRCDT0101AFZZ
2	Low reflection disc	Recording minidisc SONY 80 minutes disc is recommended.(example:PRISM 80)	————————
3	————————	Head Adjusting transparent	RRCDT0103AFZZ
4	Low reflection disc	Pre-adjustment disc [TEAC Test MD]	88GMMD-318

Extension Cable (See Fig. 29)

	Type	Part No.
1	Extension PWB for servicing	RUNTK0532AFZZ
2	Extension Connector (2 Pin)	QCNWK0129AFZZ
3	Extension Cable (6 Pin)	QCNWK0130AFZZ
4	Extension Cable (5 Pin)	QCNWK0109AFZZ
5	Extension Cable (28 Pin)	QCNWK0108AFZZ

2. Test Mode

Test mode setting method

1. While holding down the MD PLAY and SURROUND buttons simultaneously, press the ON/STAND-BY button.
   (State Ⓐ is changed to state Ⓑ.)
2. Insert the playback-only disc 1 (high reflection disc) or the recordable disc 2 (low reflection disc). (State is changed to Ⓒ.) If "R/P WHICH?" appears, the mechanism and the PWB can be mismatched. Check whether the combination of the playing/recording PWB and mechanism are appropriate.

If "R/P WHICH?" still appears, eject the disc and check as follows.

	Step	Mode	Check items Pin 3 of IC1401	Result	Probable cause and remedy
MD TEST	1	Playback power output [ppw]	DC0.2V	To check 2	–
			DC1.5V	NG	Microcomputer may have recognized the PWB as for playback-only. Perform check 1.
	2	Recording power output [rpw]	DC1.8V	Check end	–
			Below DC1.5V	NG	Perform check 2.
		Cannot enter [rpw] mode	–	NG	Microcomputer may have recognized the PWB as for playback-only. Perform check 1.

Check 1: Check the pin 100 line of IC1401 for defective soldering. Check the pin 93 line of IC1401 for short-circuit and defective soldering (Also check the SW PWB).

Check 2: Check the pin 3 line of IC1401 for defective soldering and short-circuit with other patterns. Check that the pickup laser is not broken.

Ⓐ tsm 1A○○e○○ : TEST MODE STOP state ○○ represents version of MD microcomputer.

↓

Ⓑ EJECT

↓

Ⓒ AUT YOBI

(When the MD STOP button is pressed in the Ⓒ state, the indication Ⓐ is restored. To restore Ⓒ again, press the EQUALIZER button.)

Entering the specific mode

Whenever the EQUALIZER button is pressed, the mode is changed.

AUTO YOBI (AUTO adjustment) → AUTO AJST (AUTO adjustment) → AUT FAB (FAB adjustment) → RST YOBI (RESULT YOBI) → RESULT → MNU YOBI (MANUAL adjustment) → MNU AJST (MANUAL adjustment) → MAN FAB (MANUAL FAB adjustment) → EEPROM_SET (EEPROM setting) → AUTO YOBI

Cancel of test mode

To restore the usual state once reset.

*Before pressing the MEMORY/ENTER button, be sure to perform the AUTO preliminary adjustment and the AUTO adjustment. Make sure that they return a "COMPLETE" result.

*When the data of EEPROM was changed or the preliminary adjustment was performed again, be sure to press the MEMORY/ENTER button to write data in the EEPROM.
(Data is written in the EEPROM by pressing the MEMORY/ENTER button.)

*When changing the EEPROM settings, write them into the EEPROM and then enter the test mode again. Perform the AUTO preliminary adjustment and the AUTO adjustment. Then, write those into the EEPROM.

• Test Mode

1. EJECT mode	• TEMP setting (of EEPROM setting) • CONTROL setting (of EEPROM setting) • Setting of laser power (record/playback power)
2. AUTO pre-adjustment mode	• Automatic pre-adjustment is performed.
3. AUTO adjustment mode	• Automatic adjustment is performed. (After adjustment the grating adjustment mode is set.)
• RESULT sub-mode • RESULT mode (final adjustment) • MANUAL pre-adjustment mode • MANUAL adjustment mode • MANUAL FAB adjustment mode	• Remove do not set this mode since it is not necessary for the service.
4. EEPROM setting mode	• Various coefficients of digital servo are changed manually.
5. TEST-PLAY mode	• Continuous playback from the specified address is performed. • C1 error rate measurement, ADIP error rate measurement.
6. TEST-REC mode	• Continuous recording from the specified address is performed.
7. INNER mode	• The position where the INNER switch is turned on is measured.

1. EJECT mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode EJECT state		[_ _ E J E C T _ _ _]
Step 2	Press the DISPLAY button.	Playback power output state	[p p w _ _ _ _ _ _ _]
Step 3	Press the DISPLAY button.	Rec power output state	[r p w _ _ _ _ _ _ _]
Step 4	Press the DISPLAY button.	Therefore do not set this mode since it is not necessary for the service.	[x p w _ _ _ _ _ _ _]
Step 5	Press the X-BASS button.	TEMP setting of EEPROM setting	
Step 6	Press the CD PLAY button.	CONTROL setting of EEPROM setting	

Confirmation of pickup laser power

It is possible to confirm in the record/playback mode with the aid of laser power meter. However, since the laser power meter measurement is characterized with dispersion, obtained data are used only for confirmation.

Reference data (at room temperature 25°C)

Playback: 0.72±0.1 mW

Record: 5.5±0.5 mW

Note: Never see directly the laser light. Otherwise your eyes are injured.

2. AUTO pre-adjustment mode (Low reflection disc only)

With the pre-adjustment disc (MMD-318)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m 1 A ○○ e ○○]
Step 2	Press once the EQUALIZER button.	AUTO pre-adjustment menu	[_ A U T _ Y O B I _]
Step 3	Press the MD PLAY button. End of adjustment	• During automatic adjustment ✳✳✳ changes as follows. HAo→ • • • • • • • • • →LAO If adjustment is OK, Step 4. If adjustment is NG, Step 5.	[✳✳✳ : _ _ _ _ _ _]
Step 4	Grating adjustment, adjustment value output Press once the MD STOP button.	 STEP 2 AUTO pre-adjustment menu	[_ C O M P L E T E _]
Step 5	Adjustment value output Press once the MD STOP button.	STEP 2 AUTO pre-adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name

3. AUTO adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state	The AUTO preliminary adjustment should have been completed.	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button two times.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press the MD PLAY button. End of adjustment	The slide moves to the innermost periphery, and automatic adjustment is started. • In case of high reflection disc ✳✳✳ changes as follows. PEG→HAG • In case of low reflection disc ✳✳✳ changes as follows. PEG→LAG→GCG→GEG→LAG If adjustment is OK, Step 4. If adjustment is NG, Step 7.	[✳✳✳ : _ _ _ _ _ _]
Step 4	Adjustment value output Press the MD PLAY button. Press the MD STOP button.	For grating adjustment STEP 5 STEP 2 AUTO adjustment	[_ C O M P L E T E _]
Step 5	Continuous playback (pit section) Continuous playback (groove section)	Confirmation of CI error	[s□□□□c○○○○] [a□□□□c○○○○]
Step 6	Press the DISPLAY button. Press the MD STOP button.	Conformation of ADIP error STEP 2 AUTO adjustment menu	[a□□□□a○○○○]
Step 7	Adjustment value output Press the MD STOP button.	STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name, ○○ : Measurement value, □□□□ : Address

4. AUTO FAB adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state	The AUTO preliminary adjustment should have been completed.	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button three times.	AUTO adjustment menu	[_ A U T _ F A B _ _]
Step 3	Press the MD PLAY button.	The slide moves to the innermost periphery, and automatic	[F A B ○○ _△△△△]
Step 4	Adjustment value output Press the MD STOP button.	STEP 2 AUTO adjustment	[○○ _ △△△△ _ □□]

• ○○ , △△△△ , □□ : Measurement value

5. EEPROM setting mode

A) Focus setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button nine times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the MD PLAY button.	[F G _ _ _ _ _ _ ◆◆]
Step 5	Press the EQUALIZER button.	[F F 1 _ _ _ _ _ ◆◆]
Step 6	Press the EQUALIZER button.	[F F 2 _ _ _ _ _ ◆◆]
Step 7	Press the EQUALIZER button.	[F Z H L E V _ _ ◆◆]
Step 8	Press the EQUALIZER button.	[F O K L E V n _ ◆◆]
Step 9	Press the EQUALIZER button.	[F O K L E V f _ ◆◆]
Step 10	Press the EQUALIZER button.	[F O K L P F n _ ◆◆]
Step 11	Press the EQUALIZER button.	[F O K L P F f _ ◆◆]
Step 12	Press the EQUALIZER button.	[W A I T f _ _ _ ◆◆]
Step 13	Press the EQUALIZER button.	[D S C J G _ _ _ ◆◆]

• ◆◆ : Setting value

B) Spin setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button nine times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the EQUALIZER button.	[_ S p i n d l e _ _]
Step 5	Press the MD PLAY button.	[S P G _ _ _ _ _ ◆◆]
Step 6	Press the EQUALIZER button.	[S P G _ i n _ _ ◆◆]
Step 7	Press the EQUALIZER button.	[S P G _ m i d _ ◆◆]
Step 8	Press the EQUALIZER button.	[S P G _ o u t _ ◆◆]
Step 9	Press the EQUALIZER button.	[S P 1 _ _ _ _ _ ◆◆]
Step 10	Press the EQUALIZER button.	[S P 2 _ _ _ _ _ ◆◆]
Step 11	Press the EQUALIZER button.	[S P 3 _ _ _ _ _ ◆◆]
Step 12	Press the EQUALIZER button.	[S P 4 _ _ _ _ _ ◆◆]
Step 13	Press the EQUALIZER button.	[S P 5 _ _ _ _ _ ◆◆]
Step 14	Press the EQUALIZER button.	[S P D L M _ _ ◆◆]

• ◆◆ : Setting value

C) Tracking setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button nine times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the EQUALIZER button two times.	[_ T r a c k i n g _]
Step 5	Press the MD PLAY button.	[T G _ _ _ _ _ _ ◆◆]
Step 6	Press the EQUALIZER button.	[T F 1 _ _ _ _ _ ◆◆]
Step 7	Press the EQUALIZER button.	[T F 2 _ _ _ _ _ ◆◆]
Step 8	Press the EQUALIZER button.	[S V C N T 4 _ _ ◆◆]
Step 9	Press the EQUALIZER button.	[T R B L V o _ _ ◆◆]

C) Tracking setting

Step No.	Setting Method	Display
Step 10	Press he EQUALIZER button.	[[T R B L V t _ _ ◆◆]
Step 11	Press the EQUALIZER button.	[T R K L V o _ _ ◆◆]
Step 12	Press the EQUALIZER button.	[T R K L V t _ _ ◆◆]
Step 13	Press the EQUALIZER button.	[T D P W o _ _ _ ◆◆]
Step 14	Press the EQUALIZER button.	[T D P W t _ _ _ ◆◆]
Step 15	Press the EQUALIZER button.	[S L C T o _ _ _ ◆◆]
Step 16	Press the EQUALIZER button.	[S L C T t _ _ _ ◆◆]
Step 17	Press the EQUALIZER button.	[S L C T m _ _ _ ◆◆]
Step 18	Press the EQUALIZER button.	[T C R S C 1 P _ ◆◆]
Step 19	Press the EQUALIZER button.	[C O T L V p _ _ ◆◆]
Step 20	Press the EQUALIZER button.	[C O T L V r _ _ ◆◆]
Step 21	Press the EQUALIZER button.	[S L B K m _ _ _ ◆◆]

• ◆◆ : Setting value

D) Sled setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button nine times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the EQUALIZER button three times.	[_ _ _ S l e d _ _ _]
Step 5	Press the MD PLAY button.	[S L G _ _ _ _ _ ◆◆]
Step 6	Press the EQUALIZER button.	[S L 2 _ _ _ _ _ ◆◆]
Step 7	Press the EQUALIZER button.	[S L D L I M _ _ ◆◆]
Step 8	Press the EQUALIZER button.	[S L D L E V _ _ ◆◆]
Step 9	Press the EQUALIZER button.	[S L K L V k _ _ ◆◆]
Step 10	Press the EQUALIZER button.	[S L K L V t _ _ ◆◆]
Step 11	Press the EQUALIZER button.	[S L K L V m _ _ ◆◆]

• ◆◆ : Setting value

E) TEMP setting

Step No.	Setting Method	Display
Step 1	EJECT state	[_ _ E J E C T _ _ _]
Step 2	Press the X-BASS button.	[T E M P_ ○○ _ ◆◆]

• ◆◆ : Setting value, ○○ : Measurement value

F) CONTROL setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button nine times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the EQUALIZER button five times.	[_ C o n t r o l _ _]
Step 5	Press the MD PLAY button.	[C O N T R L 1 _ ◆◆]
Step 6	Press the EQUALIZER button.	[C O N T R L 2 _ ◆◆]
Step 7	Press the EQUALIZER button.	[S P K L E V m _ ◆◆]
Step 8	Press the EQUALIZER button.	[A D J T T M _ _ ◆◆]
Step 9	Press the EQUALIZER button.	[H D E Q A D _ _ ◆◆]
Step 10	Press the EQUALIZER button.	[L D E Q A D _ _ ◆◆]
Step 11	Press the EQUALIZER button.	[G D E Q A D _ _ ◆◆]
Step 12	Press the EQUALIZER button.	[H D E Q B D _ _ ◆◆]
Step 13	Press the EQUALIZER button.	[L D E Q B D _ _ ◆◆]
Step 14	Press the EQUALIZER button.	[G D E Q B D _ _ ◆◆]
Step 15	Press the EQUALIZER button.	[H A L S G _ _ _ ◆◆]
Step 16	Press the EQUALIZER button.	[L A L S G _ _ _ ◆◆]

Step No.	Setting Method	Display
Step 17	Press the EQUALIZER button.	[G A L S G _ _ _ ◆◆]
Step 18	Press the EQUALIZER button.	[H A L S O F S _ ◆◆]
Step 19	Press the EQUALIZER button.	[L A L S O F S _ ◆◆]
Step 20	Press the EQUALIZER button.	[G A L S O F S _ ◆◆]

• ◆◆ : Setting value

G) ADJUST setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m 1 A ○○ e ○○]
Step 2	Press the EQUALIZER button nine times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the EQUALIZER button six times.	[A D J S E T _ _ _ _]
Step 5	Press the MD PLAY button.	[C O K _ _ _ _ _ ◆◆]
Step 6	Press the EQUALIZER button.	[F A T _ _ _ _ _ ◆◆]
Step 7	Press the EQUALIZER button.	[T A T _ _ _ _ _ ◆◆]
Step 8	Press the EQUALIZER button.	[C A T _ _ _ _ _ ◆◆]
Step 9	Press the EQUALIZER button.	[F A B _ _ _ _ _ ◆◆]
Step 10	Press the EQUALIZER button.	[S T R _ _ _ _ _ ◆◆]
Step 11	Press the EQUALIZER button.	[S F S _ _ _ _ _ ◆◆]
Step 12	Press the EQUALIZER button.	[S T C _ _ _ _ _ ◆◆]

• ◆◆ : Setting value

6. TEST-PLAY mode

(For confirmation of the playback ability at the named address.)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state	The AUTO preliminary adjustment should have been completed.	[t s m 1 A ○○ e ○○]
Step 2	Press the X-BASS button.	TEST-PLAY menu	[T E S T _ P L A Y _]
Step 3	Press once the DISPLAY button. Press once the MD PLAY button.	ADDRESS setting (Target address initial value is indicated)	[A D R E S _ 0 0 3 2]
Step 4	Continuous playback (pit section) Continuous playback (groove section)	(Address + C1 error indication) (Address + C1 error indication)	[s □□□□ c ○○○○] [a □□□□ c ○○○○]
Step 5	Press once the DISPLAY button. Continuous playback (groove section)	(Address + ADIP error indication)	[a □□□□ a ○○○○]
Step 6	Press once the MD STOP button.	TEST-PLAY menu	[T E S T _ P L A Y _]

• Whenever the X-BASS button is pressed in the address setting mode, the address changes as follows.
0 0 3 2 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 0 5 0 → 0 0 3 2 → ……

7. TEST-REC mode

With recording mini disk (For confirmation of the playback ability at the named address.)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state	The AUTO preliminary adjustment should have been completed.	[t s m 1 A ○○ e ○○]
Step 2	Press twice the X-BASS button.	TEST-REC menu	[T E S T _ R E C _ _]
Step 3	Press once the DISPLAY button.	ADDERS setting (indication of address initial value)	[a 0 0 3 2 _ p w ▽▽]
Step 4	Press once the MDPLAY button.	Continuous recording	[a □□□□ _ p w ▽▽]
Step 5	Press once the MDSTOP button.	TEST-REC menu	[T E S T _ R E C _ _]

• Whenever the X-BASS button is pressed in the address setting mode, the address changes as follows.
0 0 3 2 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 0 5 0 → 0 0 3 2 → ……

8. INNER mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m 1 A ○○ e △△]
Step 2	Press the CD PLAY button.	INNER menu	[_ _ I N N E R _ _]
Step 3	Press once the MD PLAY button.	INNER switch position measurement (SUBQ address and C1 error are also indicated.)	[s □□□□ c ○○○○]
Step 4	Press once the MD STOP button.	INNER menu	[_ _ I N N E R _ _]

• □□□□ : Address

● Lead-in switch position measurement mode

Insert the high reflection test disk TGYS1.

Note: Adjust the lead-in switch position within the range of FF85 - FFD2.

1. Measure the lead-in switch position. Loosen the screw (A1) x 1 pc. which fixes the mechanism switch PWB.
2. When the lead-in switch is located FF85 or less, tighten the screw while pressing the PWB in the direction of the arrow A. When FFD2 or more, to direction B. Measure the lead-in switch position again. After position adjustment is completed, fix the PWB with the screw (A1) x 1 pc.(shown in Figure 27-1)

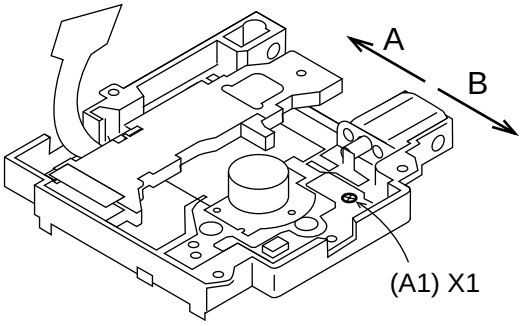


Figure 27-1

● Magnetic head mounting position check

- Check the mounting position whenever the magnetic head and the optical pickup are replaced.
- Move the optical pickup to the center to adjust the position easily.

1. Set the adjusting transparent disc 3.
2. Press down the magnetic head up shift arm by hand to raise the magnetic head.
3. View the set from above to check whether the magnetic head aligns with the optical pickup objective lens.
4. Check that the magnetic head moves up and down smoothly.

(shown in Figure 27-2)

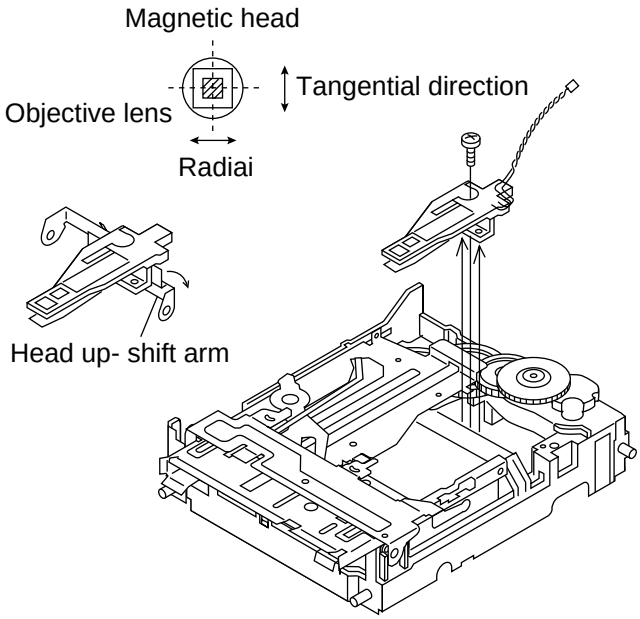


Figure 27-2

● Rotating the loading motor forcibly

The loading motor can be rotated forcibly by rotating the VOLUME UP/DOWN knob while STOP or EJECT in the test mode appears on the display.

● Mechanism Adjustment

1. Optical pickup grating inspecting method

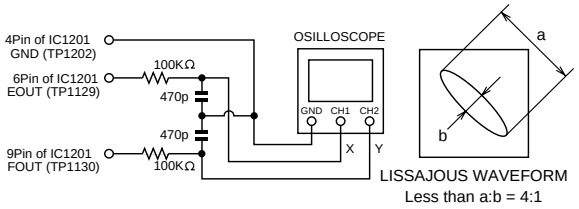


Figure 27-3 Optical Pickup Grating Deviation Measuring Method

After auto adjustment (COMPLETE appears) in the test mode (auto) using the high reflection MD disc TGYS1, adjust the Lissajous waveform (x-y) of EOUT to FOUT.

1. Slightly loosen the 3 screws of the spindle motor, adjust while observing the Lissajous waveform.
2. After adjustment, tighten screws 1, 2, and 3 in numerical order. (See Fig. 27-4.)

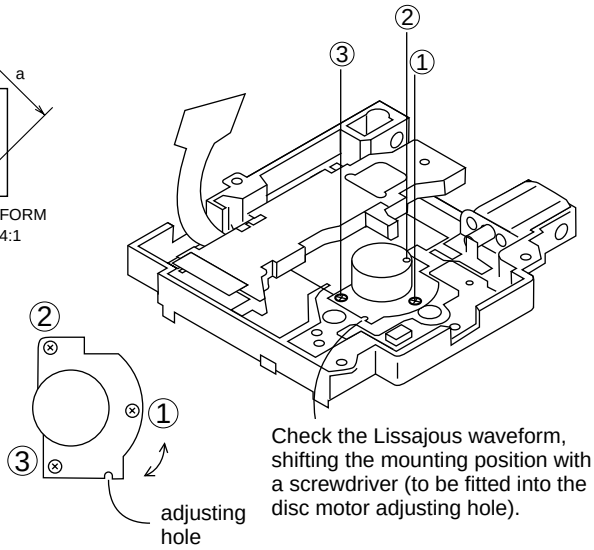


Figure 27-4

EEPROM WRITING PROCEDURE

● **EEPROM (IC1402) writing procedure**

1. Method for setting the reference temperature value

(This setting should be performed quickly at a room temperature, between 21°C and 29°C when the PWB is not hot.)

(1) When replacing the EEPROM, wait until it has cooled down.
(2) Connect the main unit using the single MD main PWB.
(3) Enter the test mode as shown on page 22.
"EJECT"
(4) Press the NORMAL button.
"TEMP ○○ ◆◆"
○○:Measured temperature, ◆◆: Temperature setting
(5) Find the temperature correction value for the current ambient temperature on the following table. Adjust the temperature correction value using the VOLUME knob.

Ambient temperature	correction
+ 21.0 °C ~ + 23.2 °C	-1 H
+ 23.3 °C ~ + 26.8 °C	± 0 H
+ 26.9 °C ~ + 29.0 °C	+1 H

An example: When ambient temperature is 22°C and measured temperature is 7AH
Temperature setting = 7A H - 01 H
= 79 H
* When the measured temperature fluctuates between two values, take lower one (if temperature fluctuates between 7AH and 79H, take 79H).

(6) Press the MEMORY/ENTER button and write the temperature setting into the EEPROM.

2. Method for making settings other than the reference temperature

(1) Install the MD main PWB in the mechanism, and connect it to the main unit.
(2) Enter the test mode as shown on page 22, and insert a disc.
"AUT YOBI"
(3) Press the EQUALIZER button eight times.
"EEPROM SET"
(4) Set the value according to the EEPROM DATA LIST using the VOLUME knob.
(5) Press the MEMORY/ENTER button, and the settings will be written into the EEPROM.
(6) Enter the test mode again, perform an "AUTO YOBI sdjustment", and write the results into the EEPROM.

EEPROM DATA LIST (Version : 01)

Focus setting

Item indication		Setting
F G	○○	D A H
F F 1	○○	7 0 H
F F 2	○○	E 0 H
F Z H L E V	○○	E D H
F O K L E V n	○○	0 8 H
F O K L E V f	○○	0 8 H
F O K L P F n	○○	0 0 H
F O K L P F f	○○	8 8 H
W A I T f	○○	0 1 H
D S C J G	○○	1 4 H

Spin setting

Item indication		Setting
S P G	○○	2 0 H
S P G — i n	○○	B 8 H
S P G — m i d	○○	9 0 H
S P G — o u t	○○	7 0 H
S P 1	○○	1 0 H
S P 2	○○	9 3 H
S P 3	○○	E D H
S P 4	○○	E E H
S P 5	○○	2 0 H
S P D L I M	○○	7 F H

Tracking setting

Item indication		Setting
T G	○○	6 B H
T F 1	○○	6 B H
T F 2	○○	E 0 H
S V C N T 4	○○	0 0 H
T R B L V o	○○	5 0 H
T R B L V t	○○	5 4 H
T R K L V o	○○	5 0 H
T R K L V t	○○	2 E H
T D P W o	○○	8 9 H
T D P W t	○○	1 A H
S L C T o	○○	0 0 H
S L C T t	○○	4 0 H
S L C T m	○○	5 3 H
T C R S C I P	○○	1 6 H
C O T L V P	○○	0 A H
C O T L V r	○○	1 C H
S L B K m	○○	0 8 H

Sled setting

Item indication	Setting
SLG ○○	3BH
SL2 ○○	2DH
SLDLIM ○○	7FH
SLDLEV ○○	12H
SLKLVk ○○	55H
SLKLVt ○○	2EH
SLKLVm ○○	55H

ADJUST setting

Item indication	Setting
COK ○○	A0H
FAT ○○	C0H
TAT ○○	3EH
CAT ○○	20H
FAB ○○	* 64H
STR ○○	0AH
SFS ○○	0DH
STC ○○	0DH

* The FAB value changes after the FAB adjustment.

Control setting

Item indication	Setting
CONTRL1 ○○	80H
CONTRL2 ○○	01H
SPKLEVm ○○	26H
ADJTTM ○○	14H
HDEQAD ○○	92H
LDEQAD ○○	8FH
GDEQAD ○○	8DH
MDEQBC ○○	8CH
LDEQBC ○○	8FH
GDEQBC ○○	8DH
HALSG ○○	11H
LALSG ○○	11H
GALSG ○○	11H
HALSOFS ○○	FCH
LALSOFS ○○	00H
GALSOFS ○○	00H

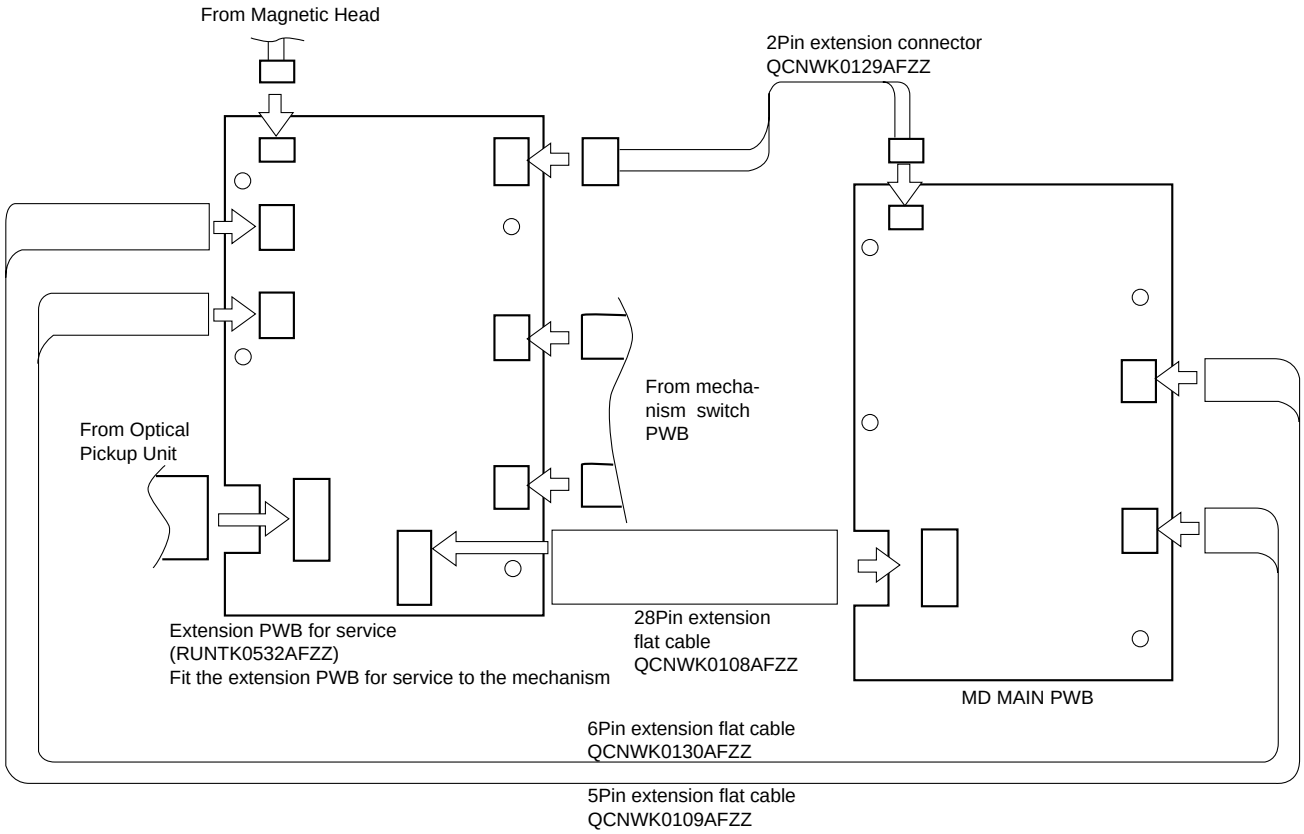


Figure 29

EXPLANATION OF ERROR DISPLAY

MD error messages

Error message	Description	Remarks
'BLANK MD'	No track is recorded on the disc	
'Can't COPY'	Digital recording from a copy prohibited source	
'Can't EDIT'	Editing impossible	
'Can't REC'	Sound memory overflow while recording	
	Impossible continuous SD writing	
'Can'tREAD*'	Focus lead in time-over	*: Details f: FOCUS ERR r: READ ERR s: SEARCH TIME OVER w: SD WRITE TIME OVER
	Track search time-over	
'DISC FULL'	No free area available on the disc	
'Er-MD80'	EEPROM readout check sum error	
'Er-MD**'	Loading mechanism operation error	**: Operation state (Error code) 1*: Recording head fall 2*: Recording head rise f*:EJECT It is written in the operation manual to ask for repairs if error occurs continuously.
'NAME FULL'	Characters exceeds limit (40)	
'NO DISC'	No MD is loaded	
'NOT AUDIO'	Played track is not audio,	Appears when no sound is detected
'PLAY MD'	Recording or editing on a playback-only MD	
'PROTECTED'	Recording or editing on a recording protected MD (recordable)	
'TEMP OVER'	Detected ambient high temperature	
'Can'tREAD*'	Cannot complete P-TOC information reading	*: Details
		a: SERVO ADJUSTMENT ERR f: FOCUS ERR s: SEARCH TIME OVER r: READ ERR
'TOC FULL'	No space available for recording or editing	
'TOC FULL*'	No space available for name information input	*: Sector number
'Er-MD41'	Error in UTOC writing test	**: Error number
'NO SIGNAL'	Cannot synchronize signals while digital input recording	
'Can'tREAD*'	Cannot complete U-TOC information reading	*: Details u: UTOC READ ERR
TOC FORM **	Error data disc is detected	*: Details L*: LOOP a_: ADDRESS ERR t_: FTNO>LTNO
'Can'tWRITE'	Cannot complete UTOC writing normally	
'? DISC'	Loaded MD is not for audio	
'Can'tSTAMP'	TNO number difference for name stamp function	
'Tr.Protect'	Editing track is in write protected mode	

CD error messages

Error message	Description	Remarks
`E-CD**	Pick mechanism error	00: PICK MECHANISM ERRS 01: PU-IN SW DETECTION NG
`E-CD**`	Tray error	20: TRAY ERRS 21:
`NO DISC`	Focus error	
`NO DISC`	IL time-over	

NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (P.P.): Polypropylene type
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
  1. In the tuner section,
     ( ) indicates AM
     < > indicates FM stereo
  2. In the main section, a tape is being played back.
  3. In the deck section, a tape is being played back.
     ( ) indicates the record state.
  4. In the power section, a tape is being played back.
  5. In the CD section, the CD is stopped.
- Parts marked with “⚠” (⊏ ═ ═ ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF.NO.	DESCRIPTION	POSITION
SW2	PICKUP-IN	OFF
SW4	OPEN/CLOSE	OFF
SW900	VOLTAGE SELECTOR	127V
SW1930	WRITE PRO	OFF
SW1931	DISC MEDIA	OFF
SW1932	LOADING	OFF
SW1933	RECORD	OFF
SW1934	PLAYBACK	OFF
SW1936	LEAD IN	OFF
SWD01	MULTI JOG	OFF
SWD02	VOLUME	OFF
SWD03	MEMORY/ENTER	OFF
SWD04	TUNING UP	OFF
SWD05	MD PLAY	OFF
SWD06	MD STOP	OFF
SWD07	TUNING	OFF
SWD08	TIMER/DELETE	OFF

REF.NO.	DESCRIPTION	POSITION
SWD09	NAME/TOC EDIT	OFF
SWD10	ON/STAND-BY	OFF
SWD11	DISPLAY(DEMO)	OFF
SWD12	REC	OFF
SWD13	CD MD EDIT,NORMAL	OFF
SWD14	CD MD EDIT,HIGH	OFF
SWD15	CD EJECT	OFF
SWD16	CD STOP	OFF
SWD17	CD PLAY	OFF
SWD18	MD EJECT	OFF
SWD20	VOLUME SELECT	OFF
SWD21	AUX	OFF
SWD22	TIMER(BAND)	OFF
SWD23	X-BASS	OFF
SWD24	EQUALIZER	OFF
SWD25	SURROUND	OFF
SWU01	SPAN SELECTOR	50/9

TYPE OF TRANSISTOR AND LED

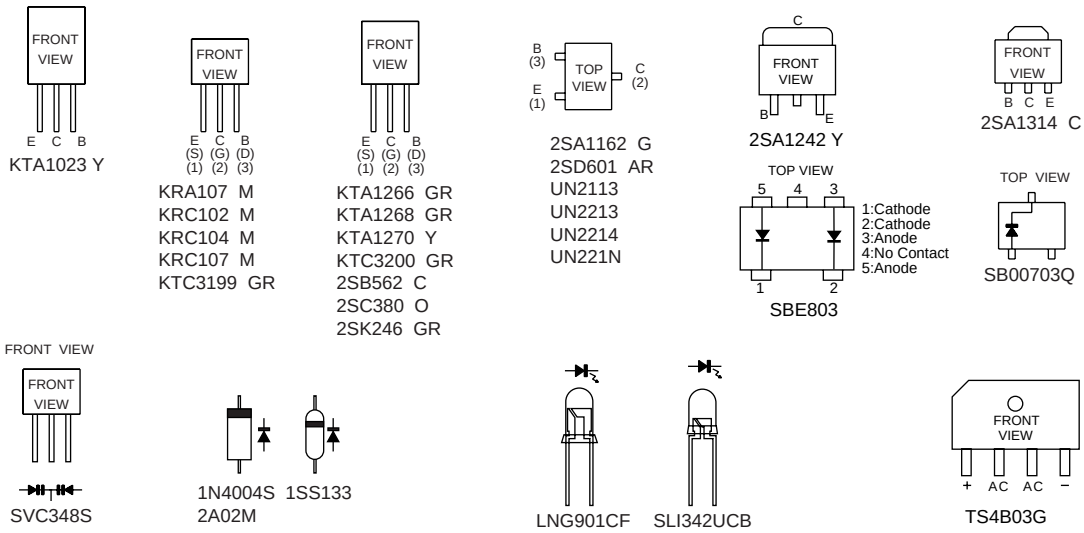


Figure 31 TYPES OF TRANSISTOR/DIODE AND LED

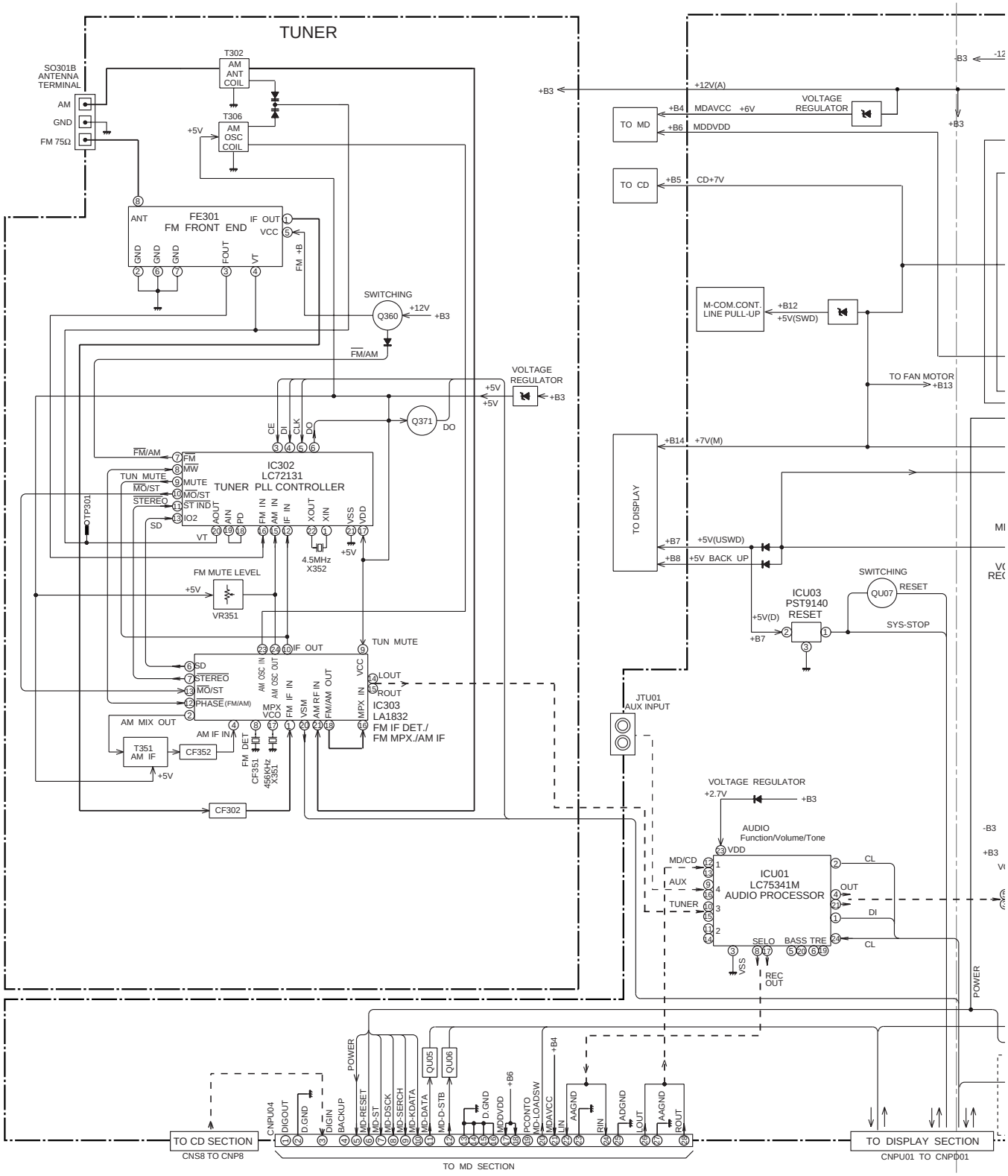


Figure 32 BLOCK DIAGRAM (1/5)

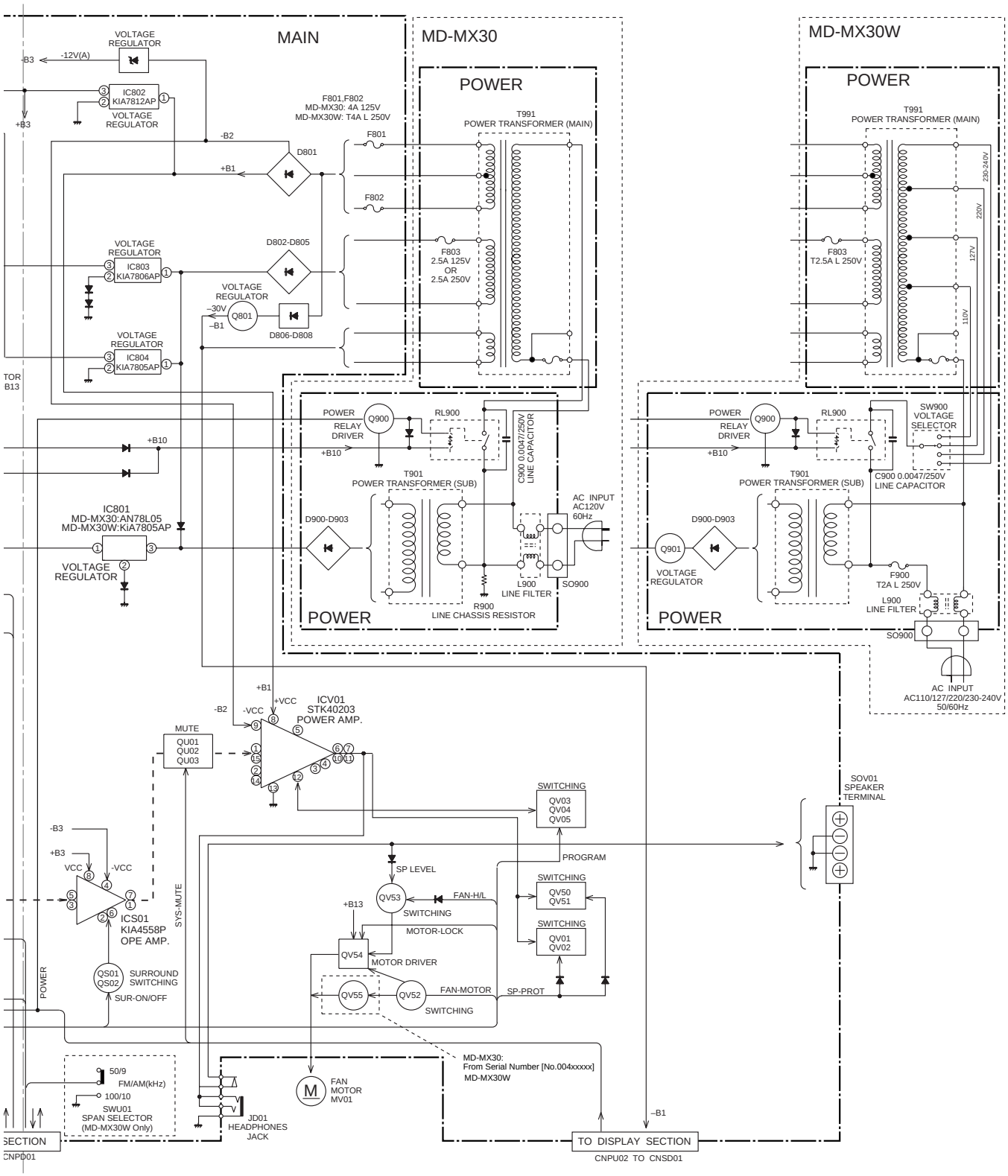


Figure 33 BLOCK DIAGRAM (2/5)

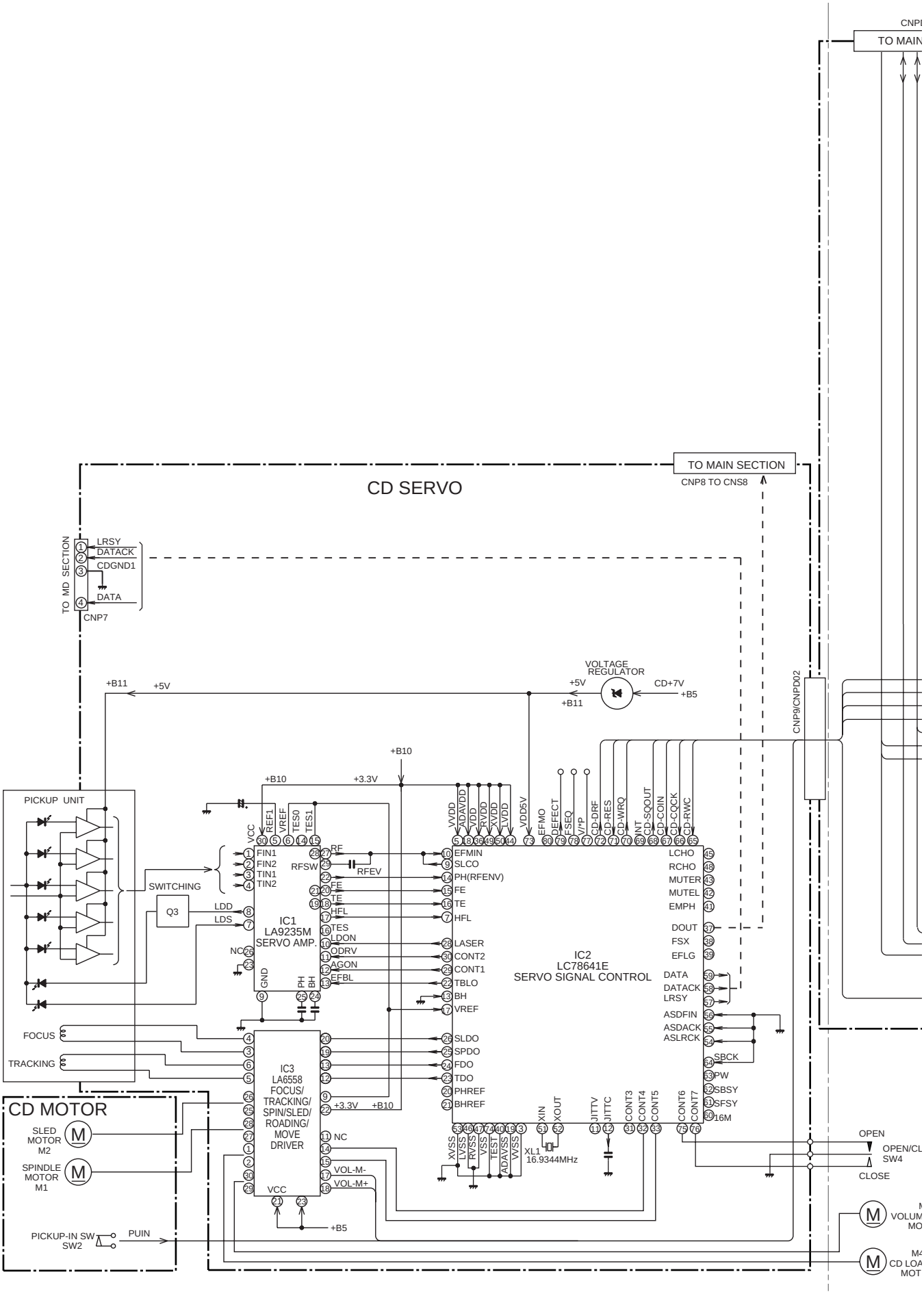


Figure 34 BLOCK DIAGRAM (3/5)

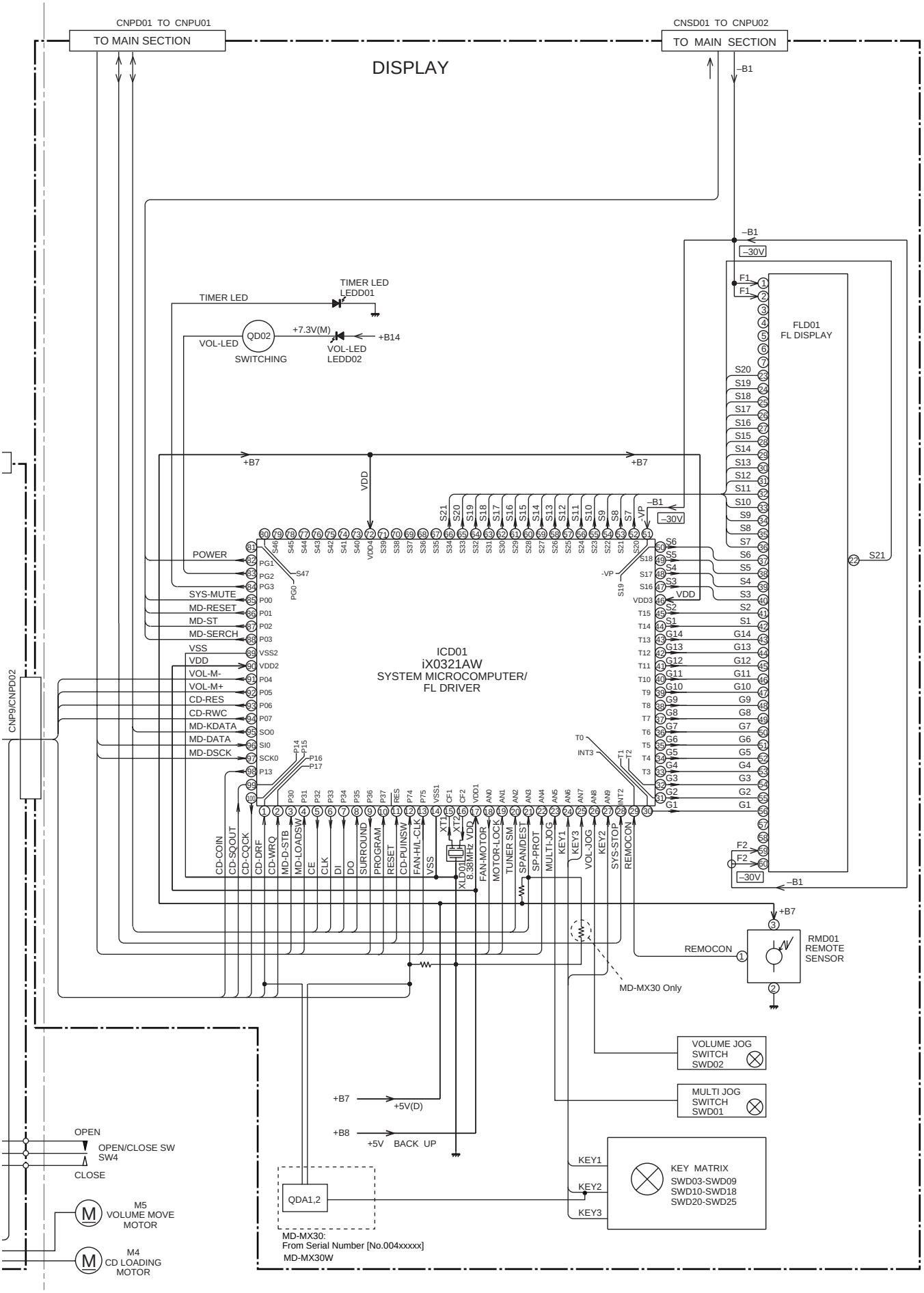


Figure 35 BLOCK DIAGRAM (4/5)

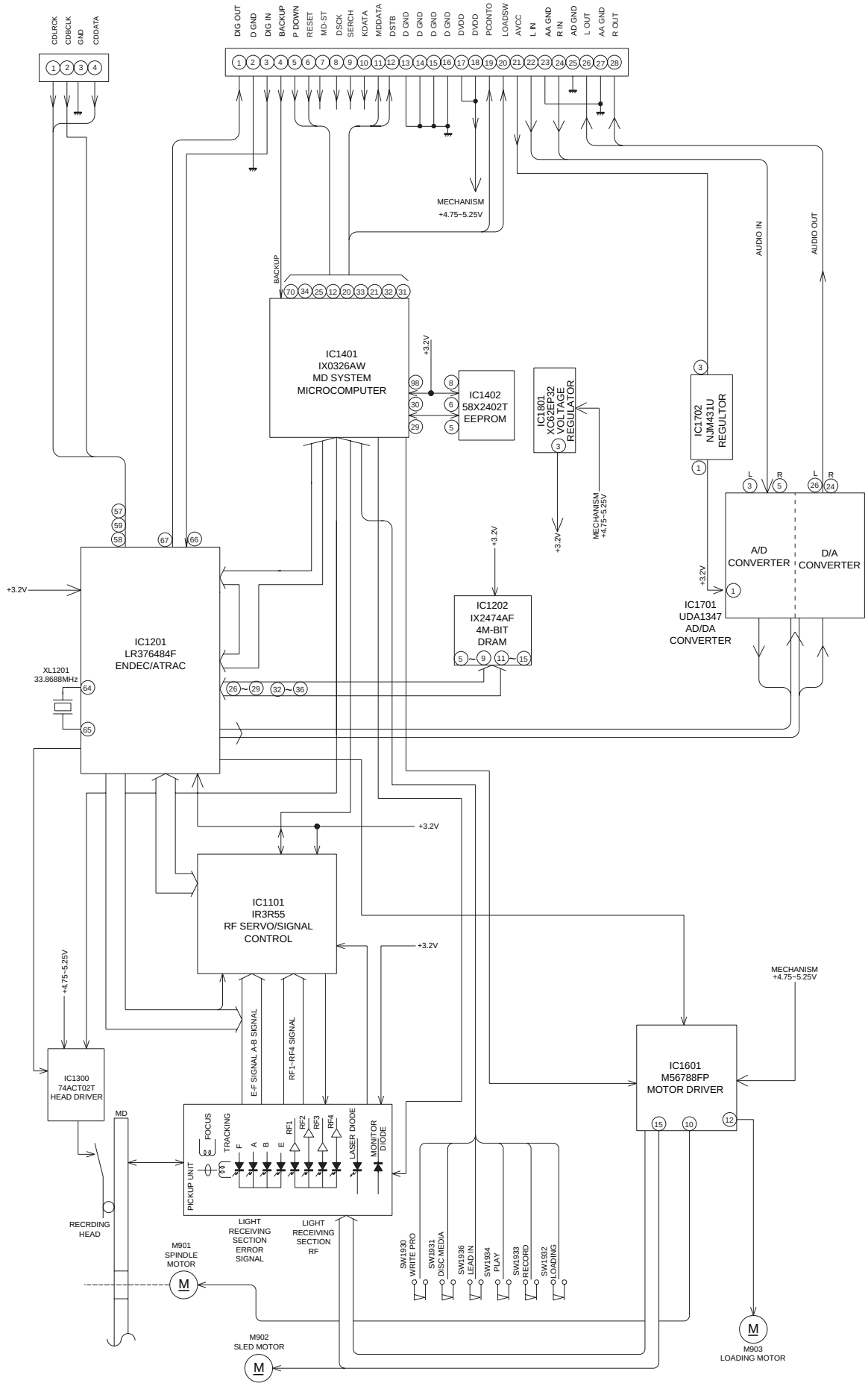
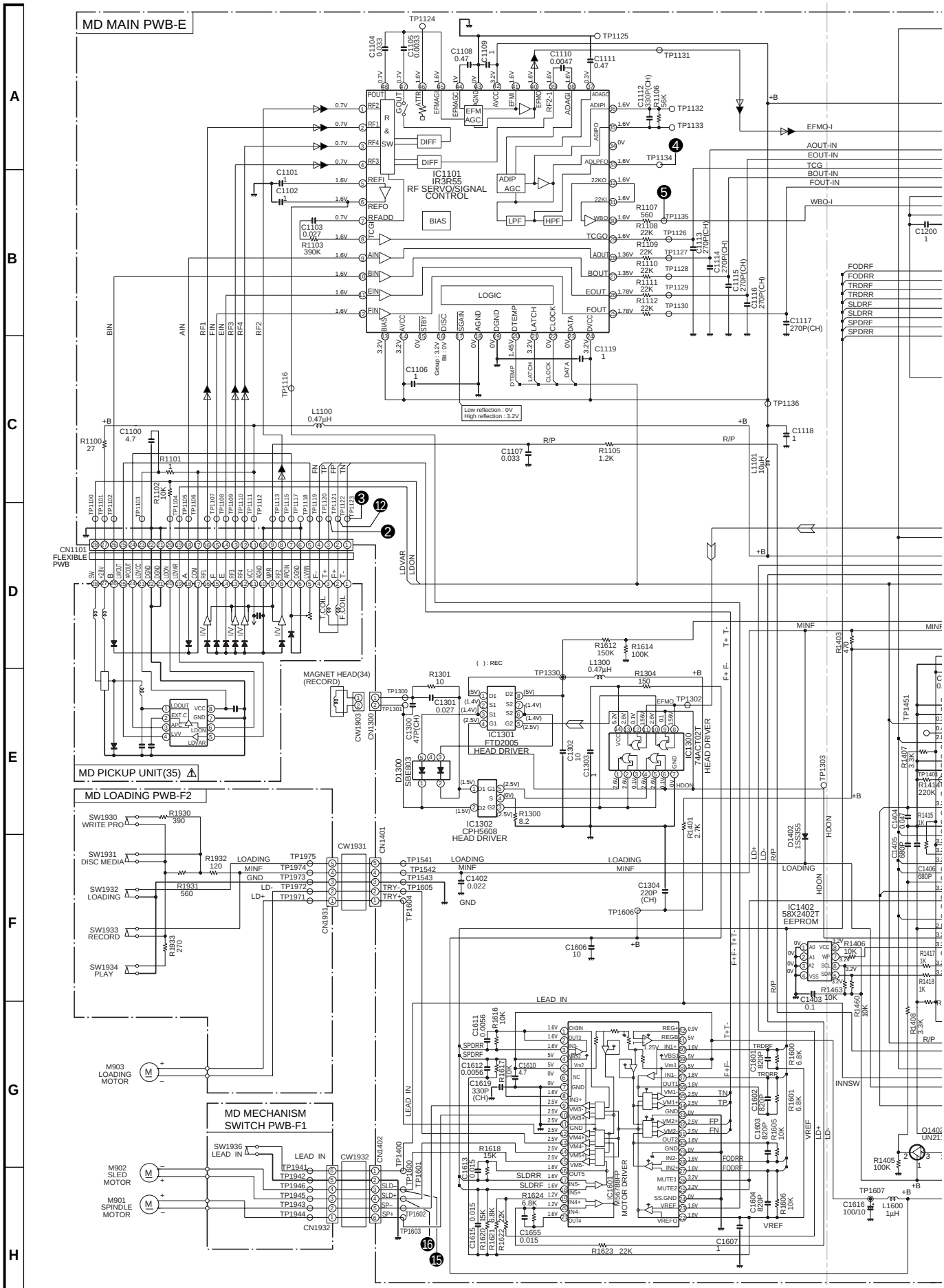


Figure 36 BLOCK DIAGRAM (5/5)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 31.

Figure 37 SCHEMATIC DIAGRAM (1/13)

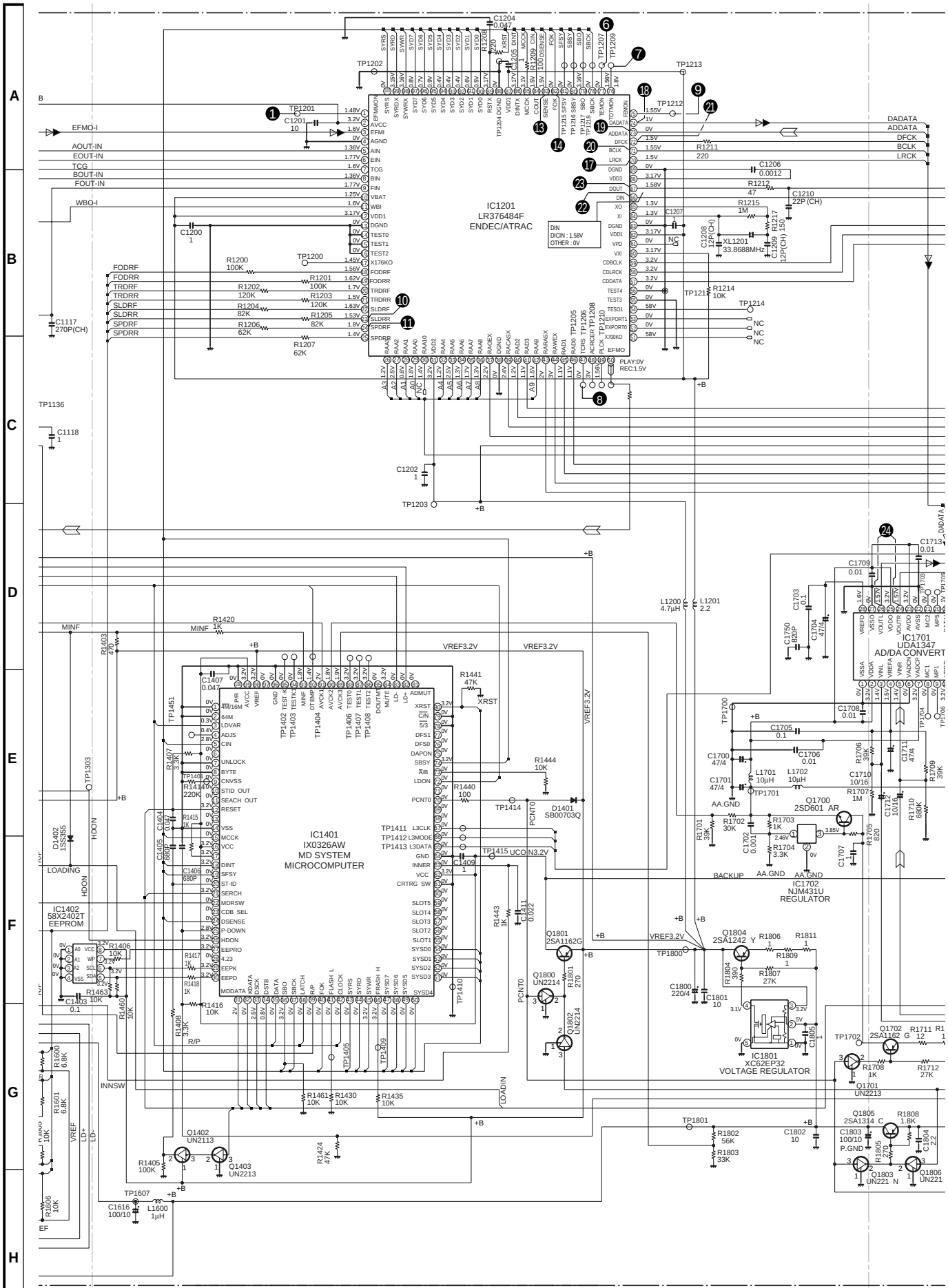
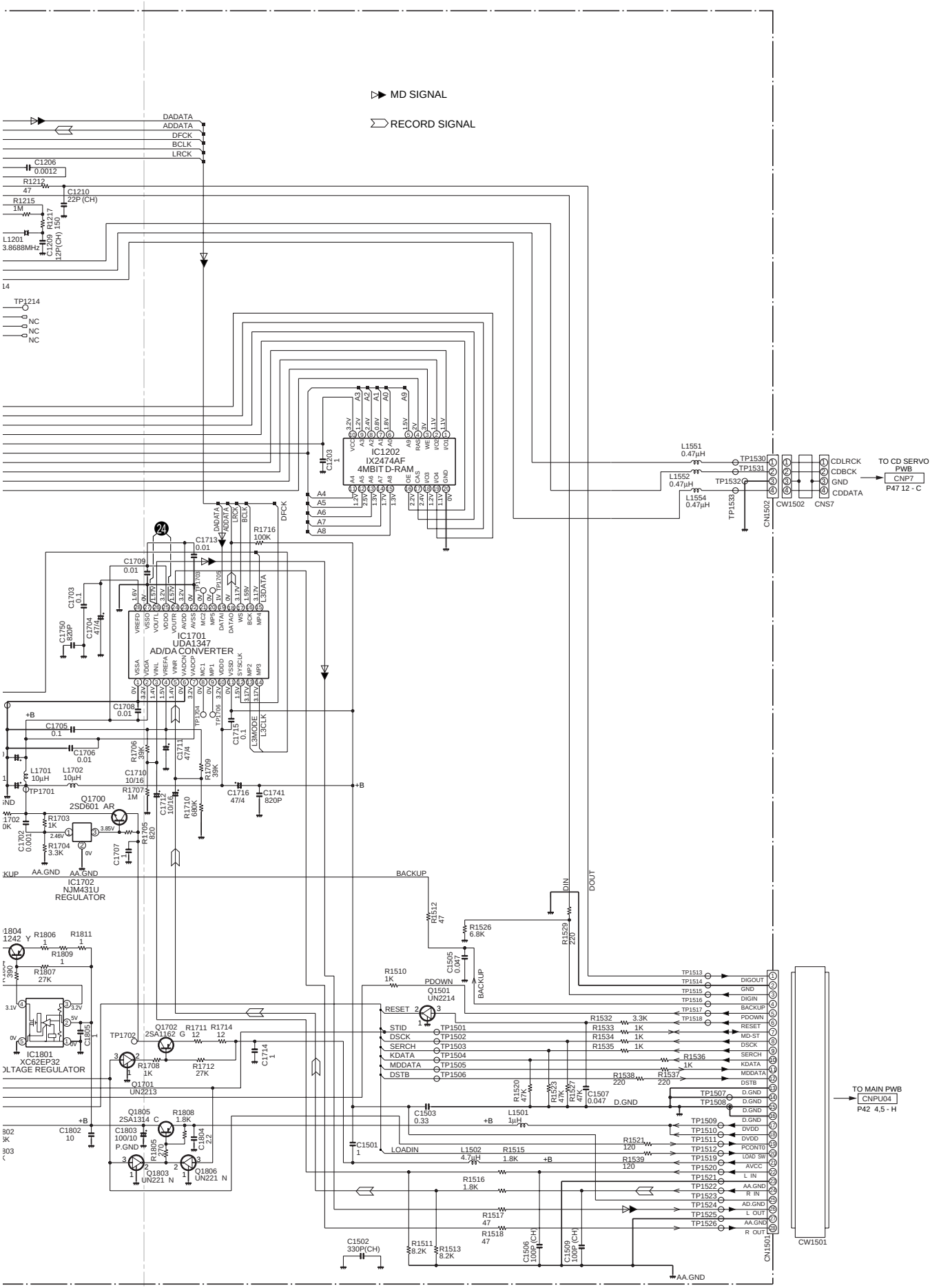


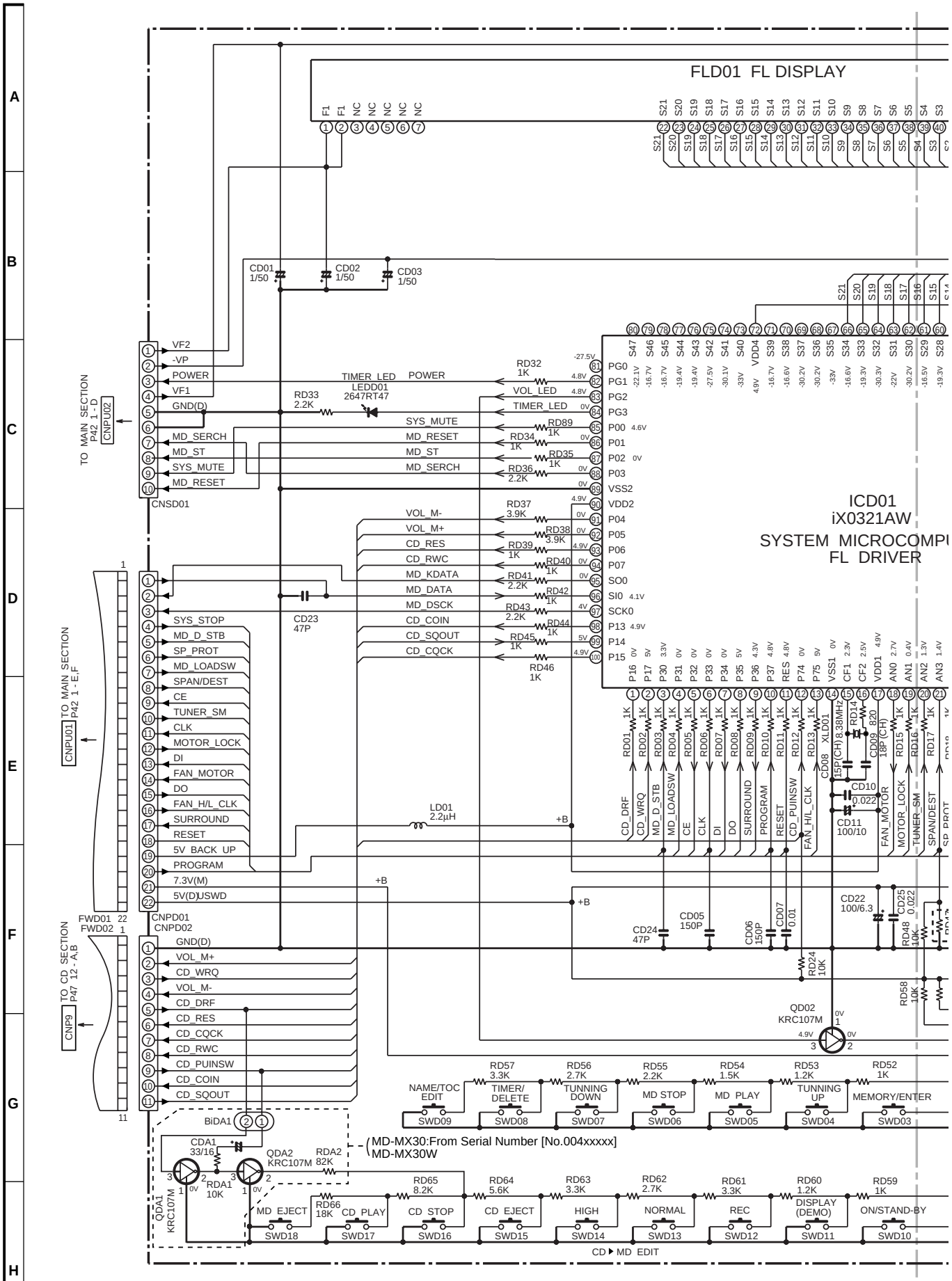
Figure 38 SCHEMATIC DIAGRAM (2/13)



• The numbers ❶ to ㉔ are waveform numbers shown in page 66 and 67.

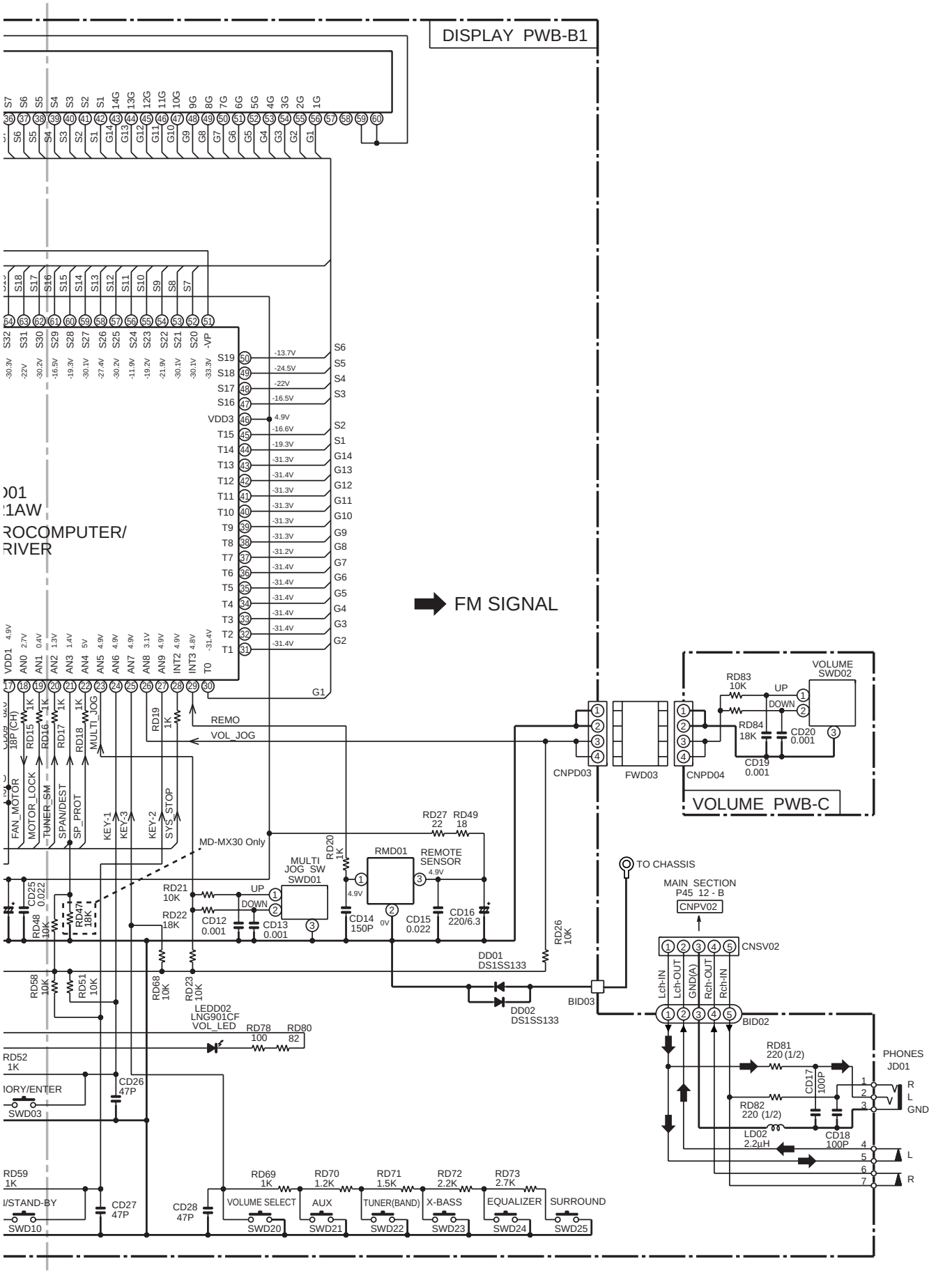
7	8	9	10	11	12

Figure 39 SCHEMATIC DIAGRAM (3/13)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 31.

Figure 40 BLOCK DIAGRAM (4/13)



7	8	9	10	11	12

Figure 41 SCHEMATIC DIAGRAM (5/13)

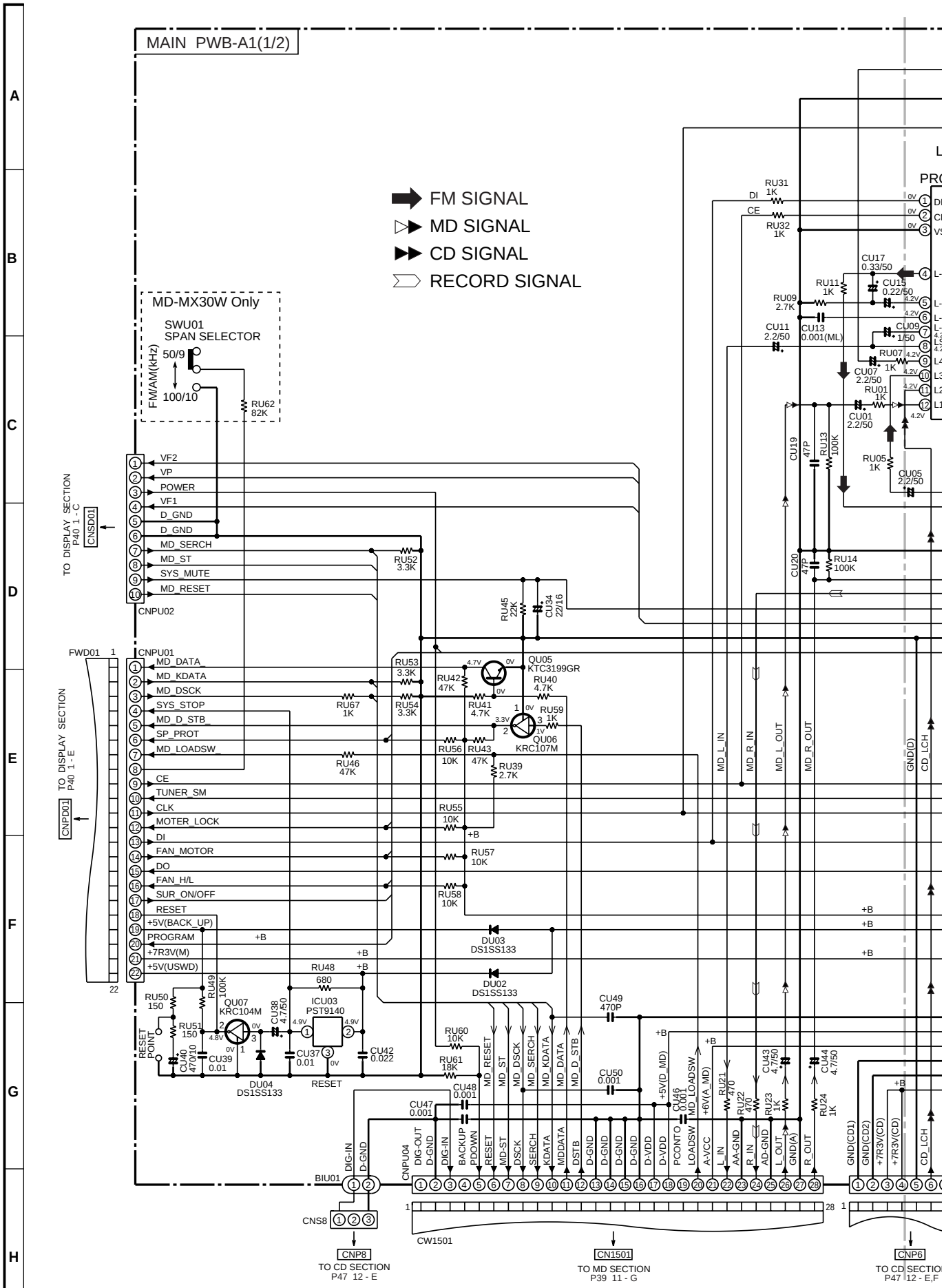
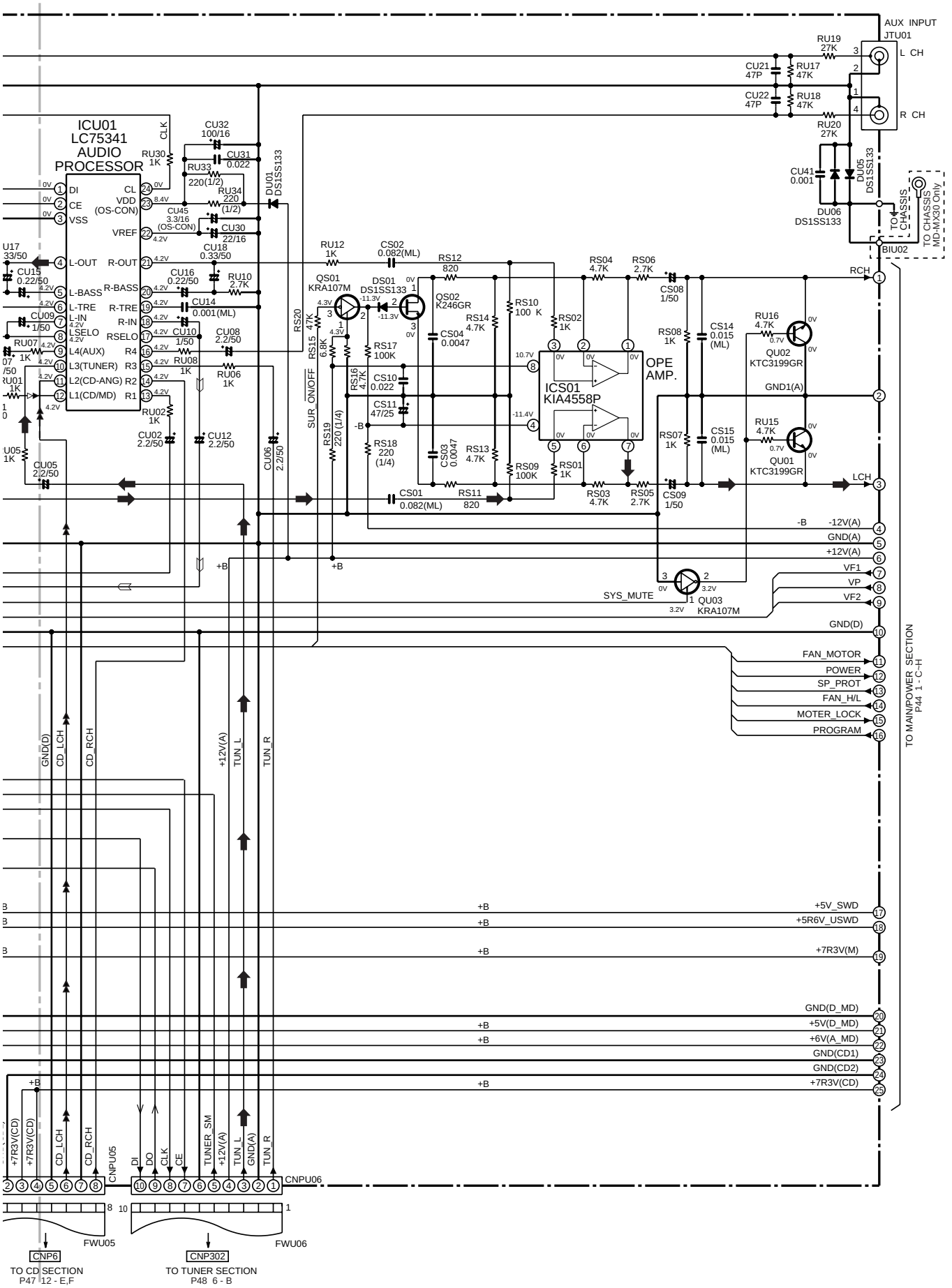


Figure 42 SCHEMATIC DIAGRAM (6/13)



7	8	9	10	11	12

Figure 43 SCHEMATIC DIAGRAM (7/13)

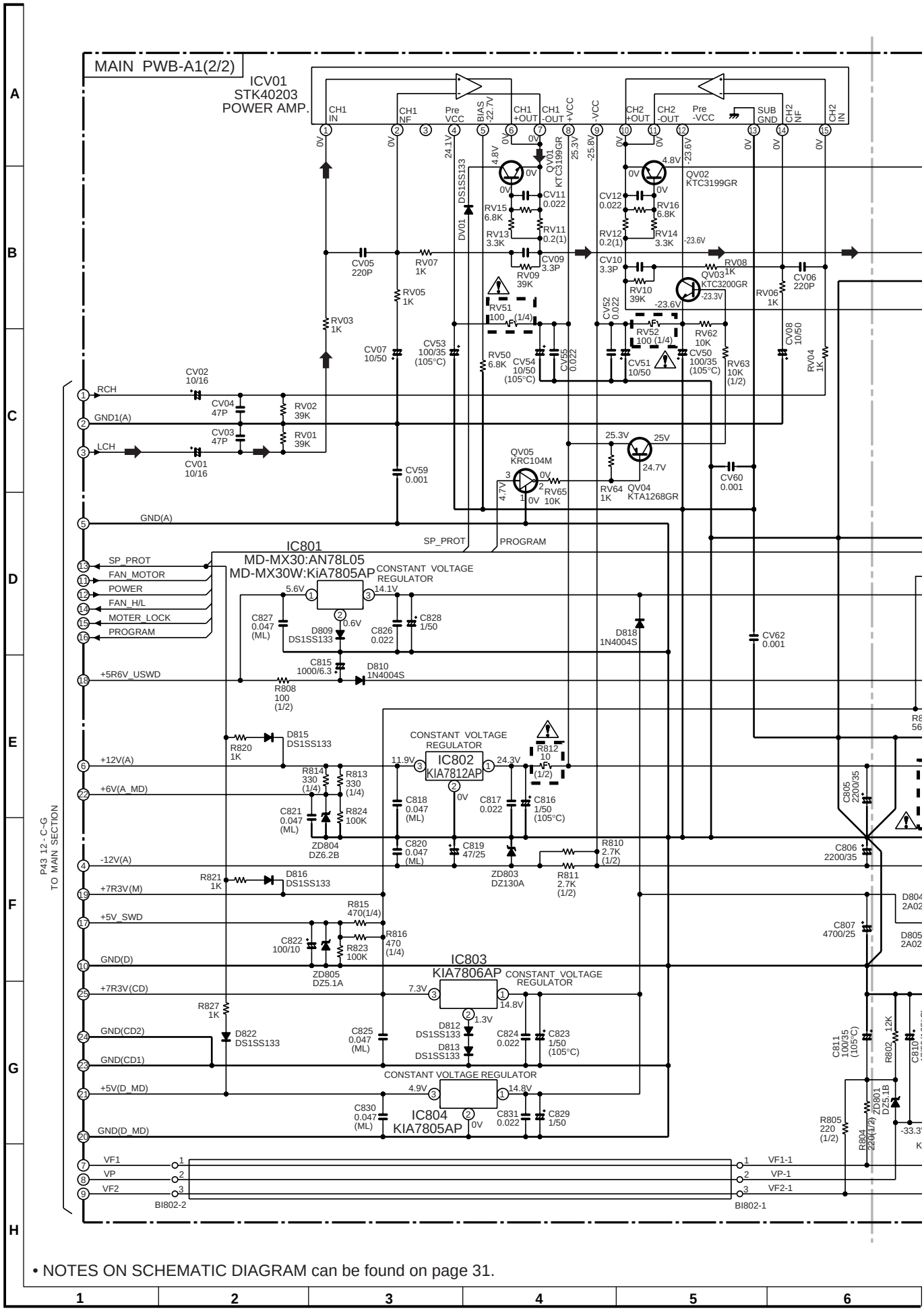
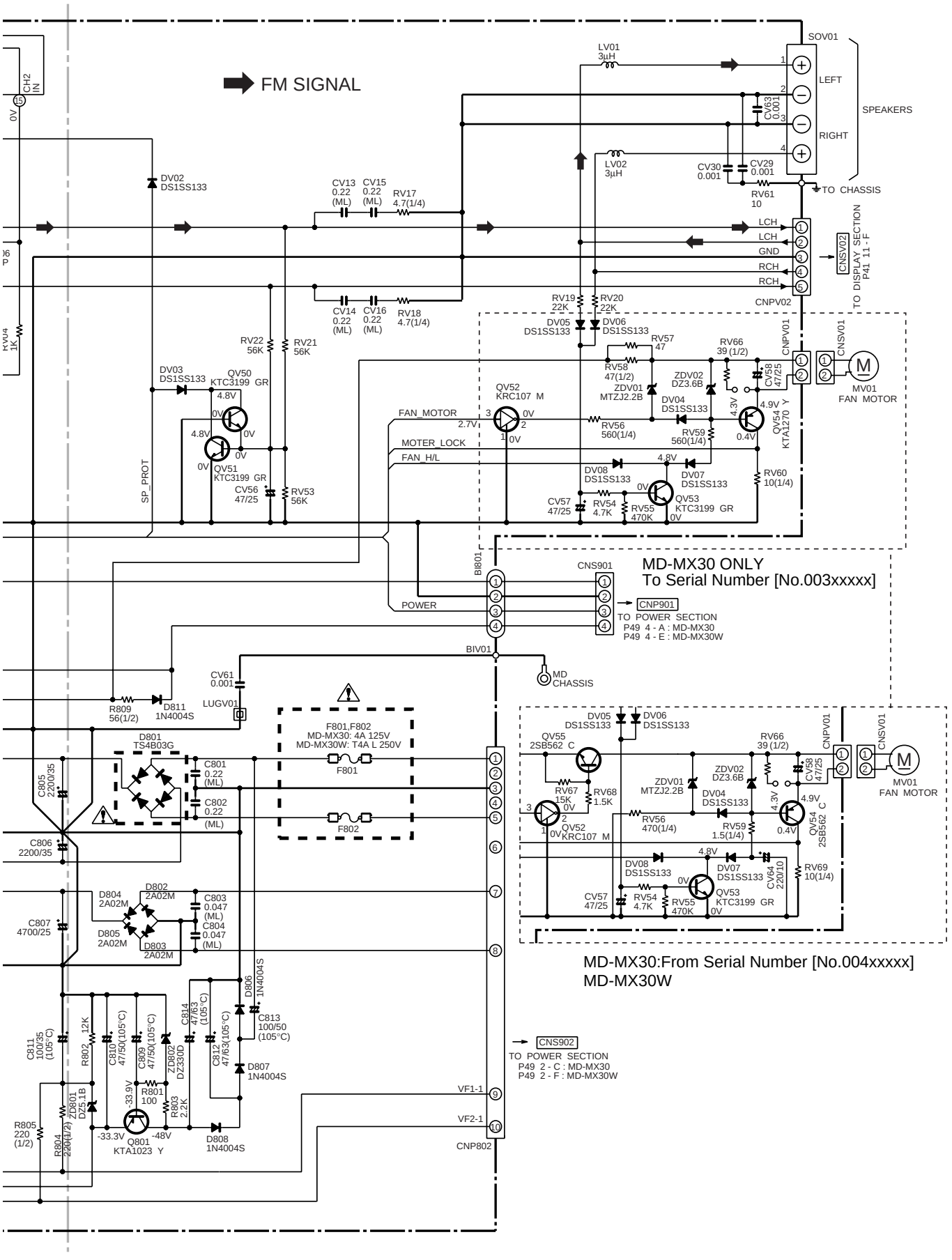
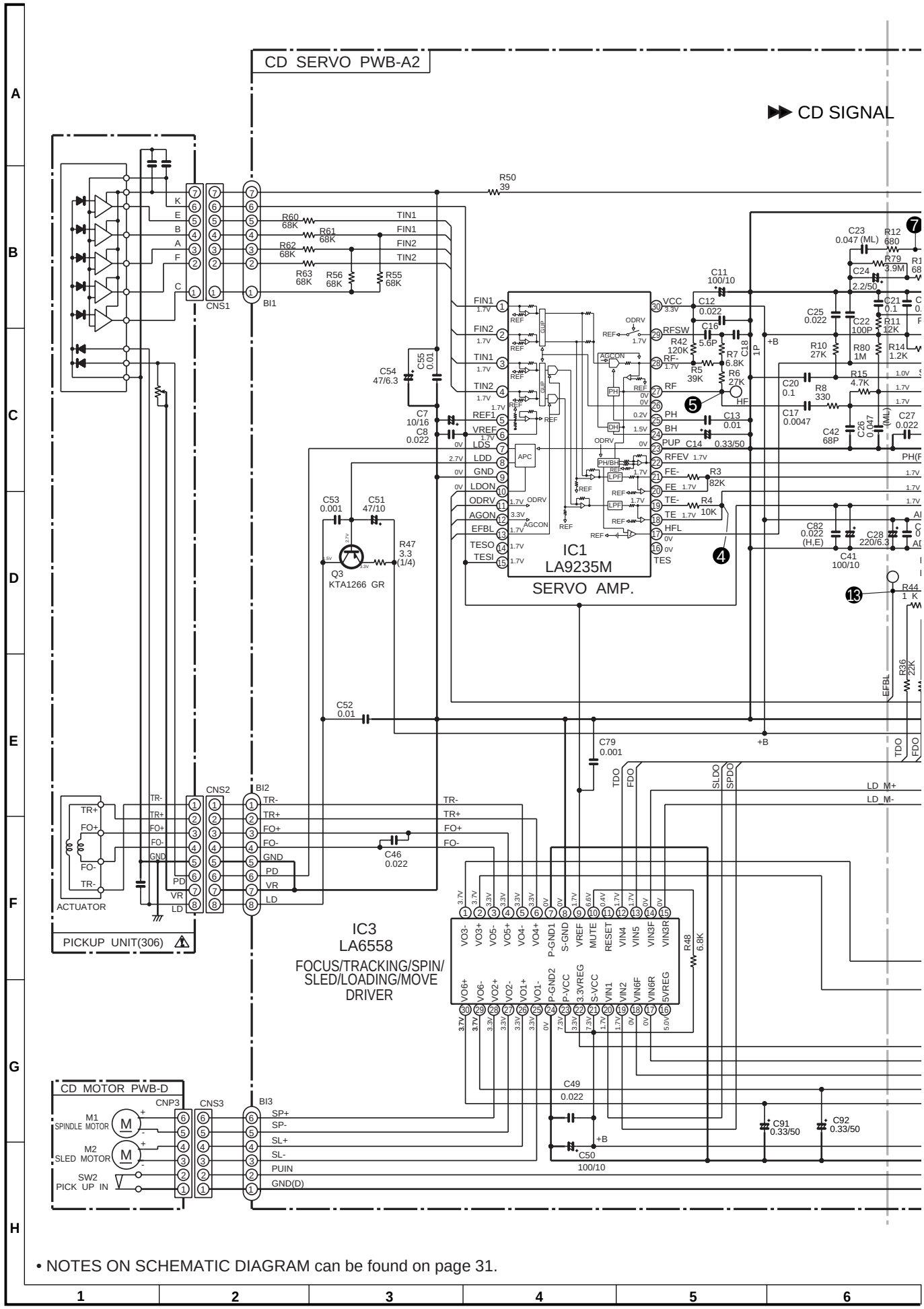


Figure 44 SCHEMATIC DIAGRAM (8/13)



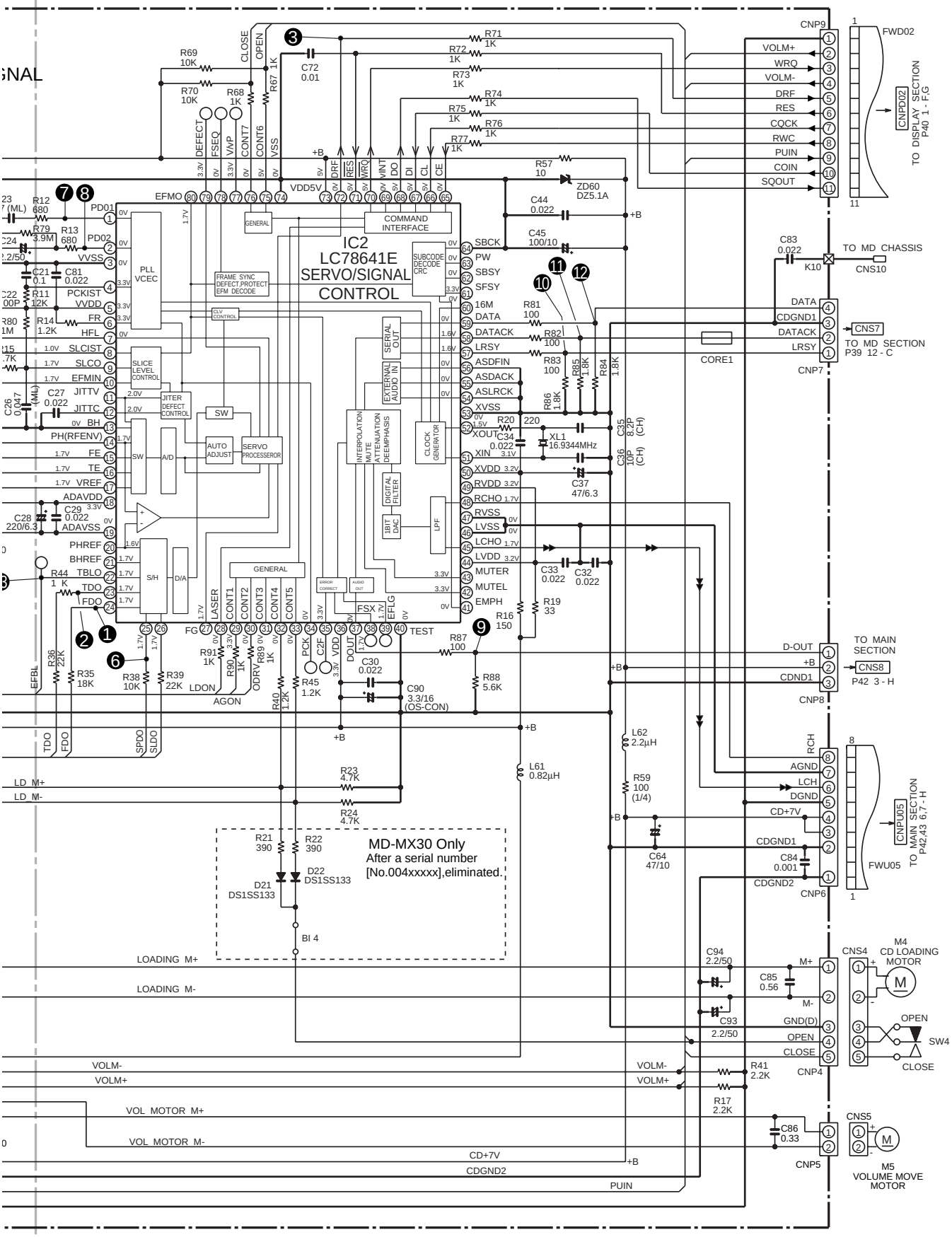
7	8	9	10	11	12

Figure 45 SCHEMATIC DIAGRAM (9/13)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 31.

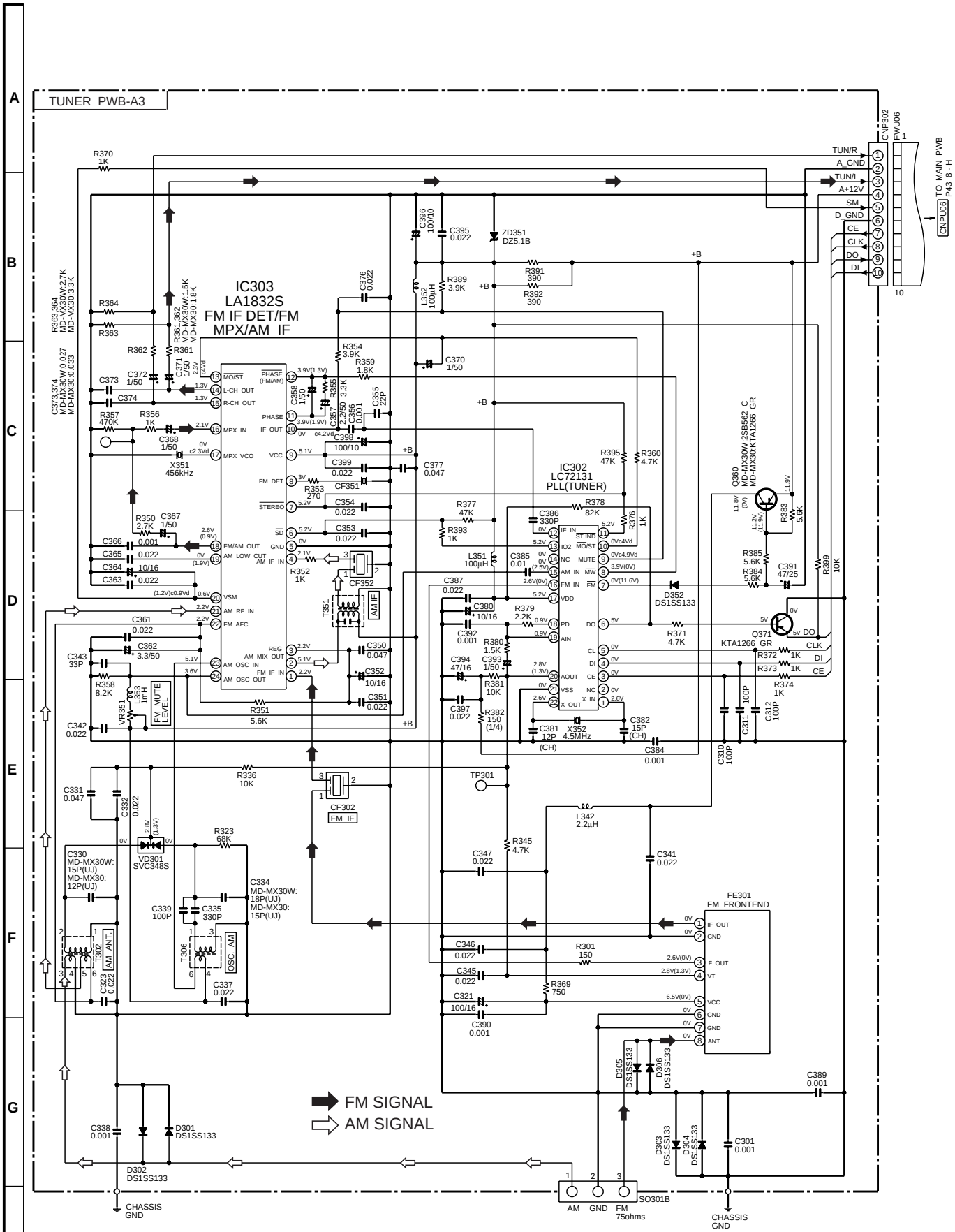
Figure 46 SCHEMATIC DIAGRAM (10/13)



• The numbers ❶ to ⓭ are waveform numbers shown in page 65.

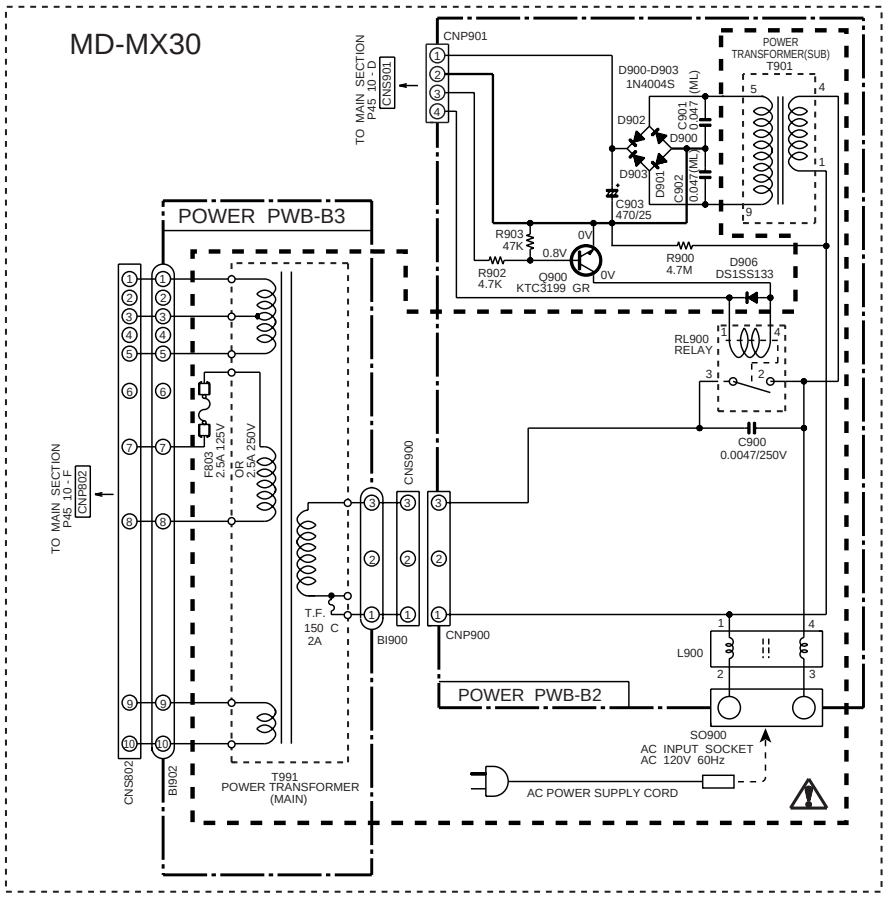
7	8	9	10	11	12

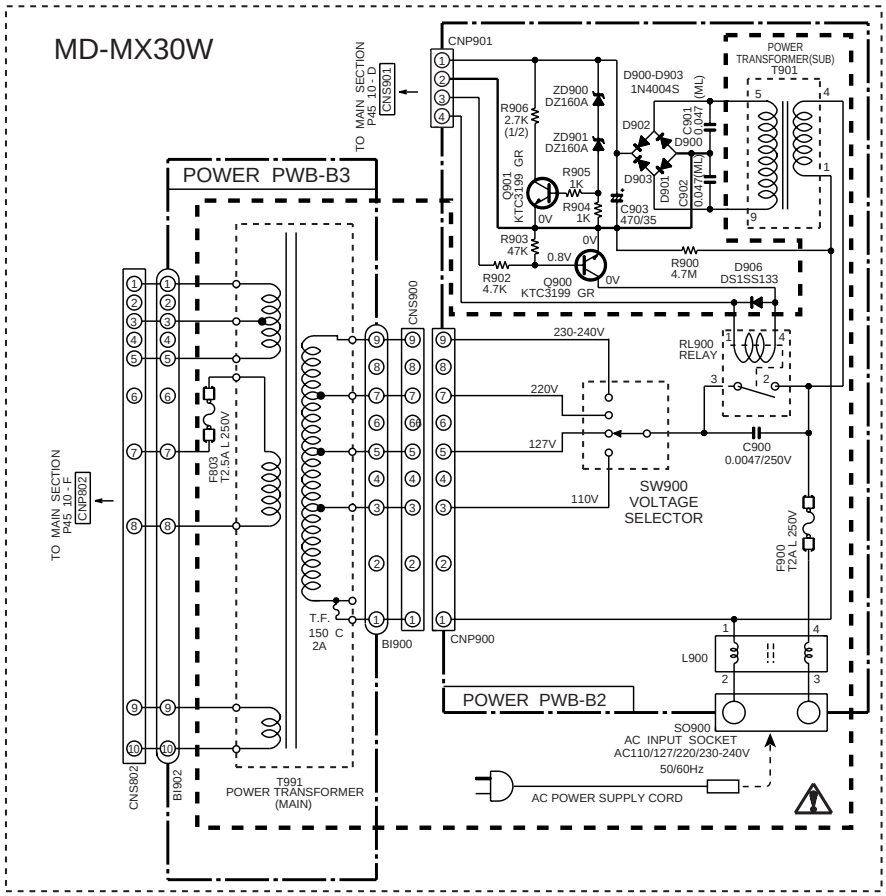
Figure 47 SCHEMATIC DIAGRAM (11/13)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 31.

Figure 48 SCHEMATIC DIAGRAM (12/13)





• NOTES ON SCHEMATIC DIAGRAM can be found on page 31.

Figure 49 SCHEMATIC DIAGRAM (13/13)

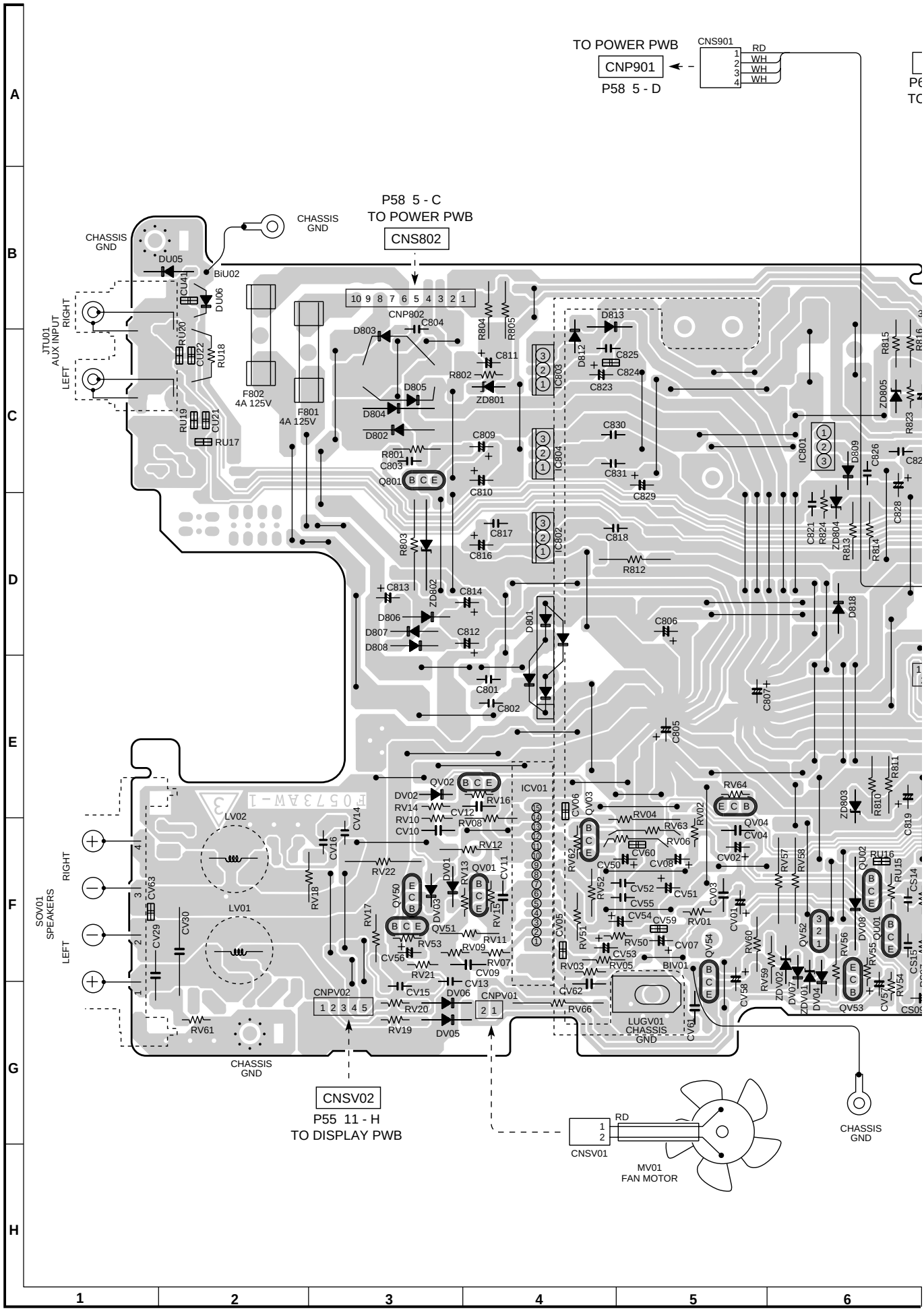


Figure 50 WIRING SIDE OF P.W.BOARD (1/15)

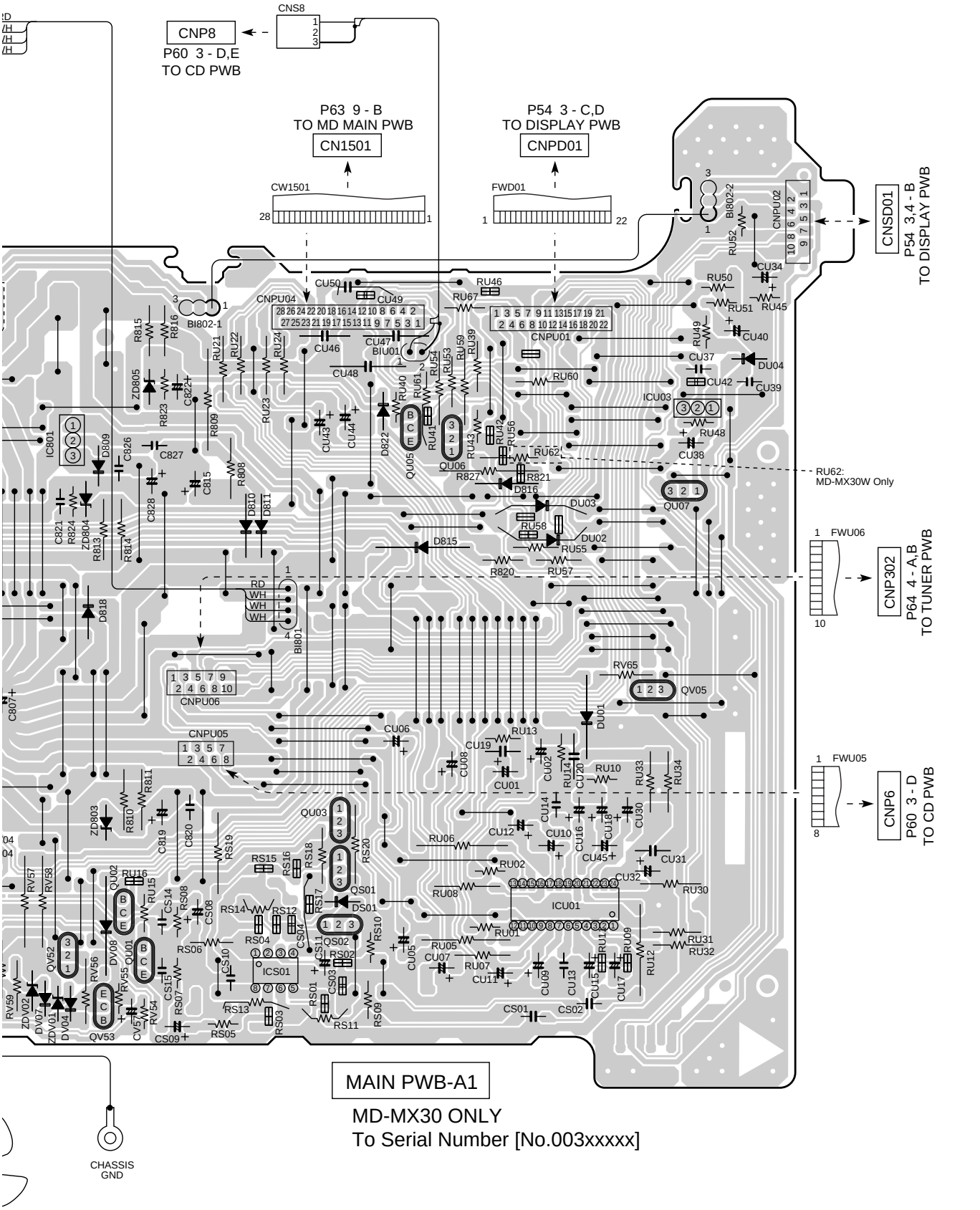


Figure 51 WIRING SIDE OF P.W.BOARD (2/15)

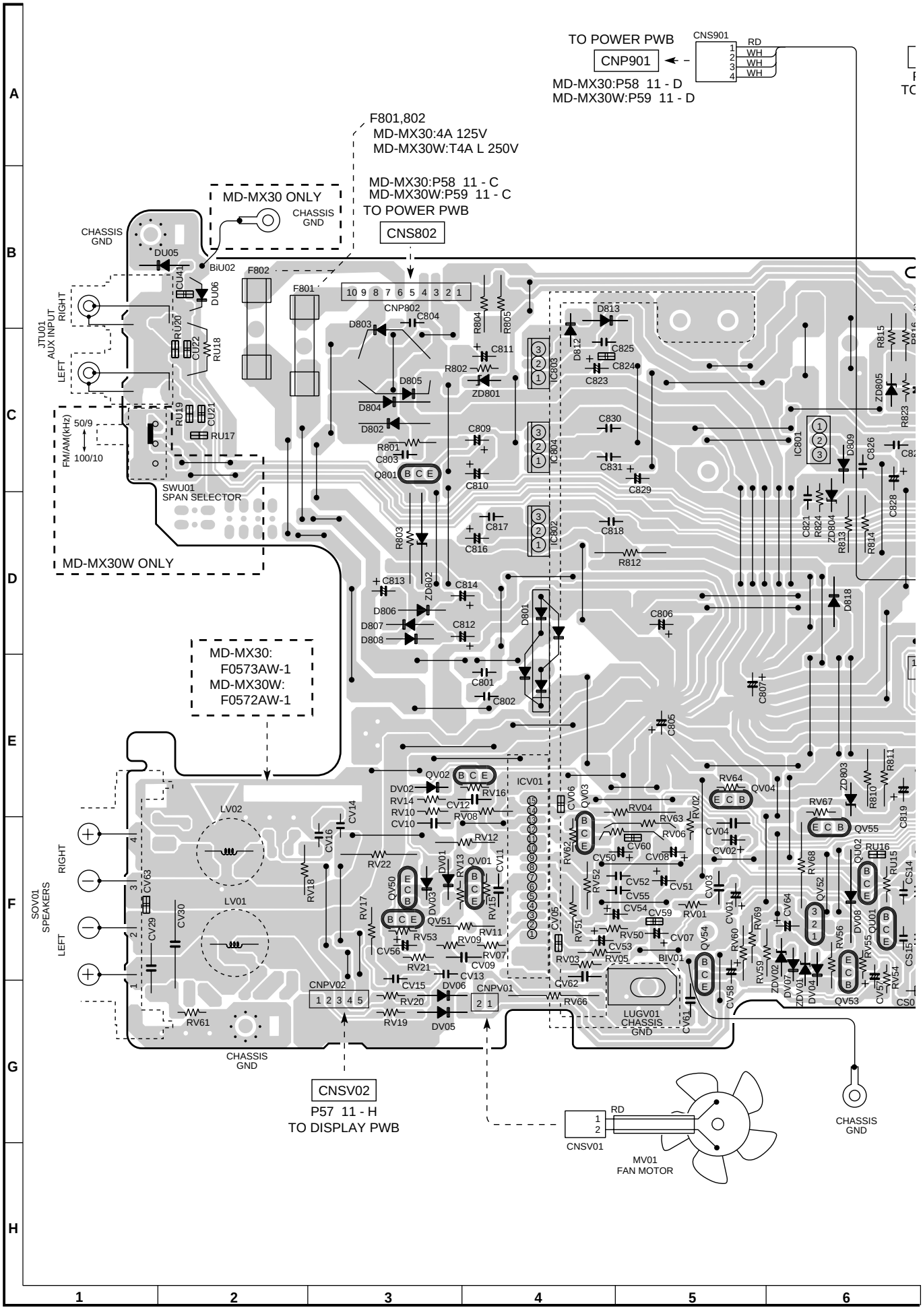
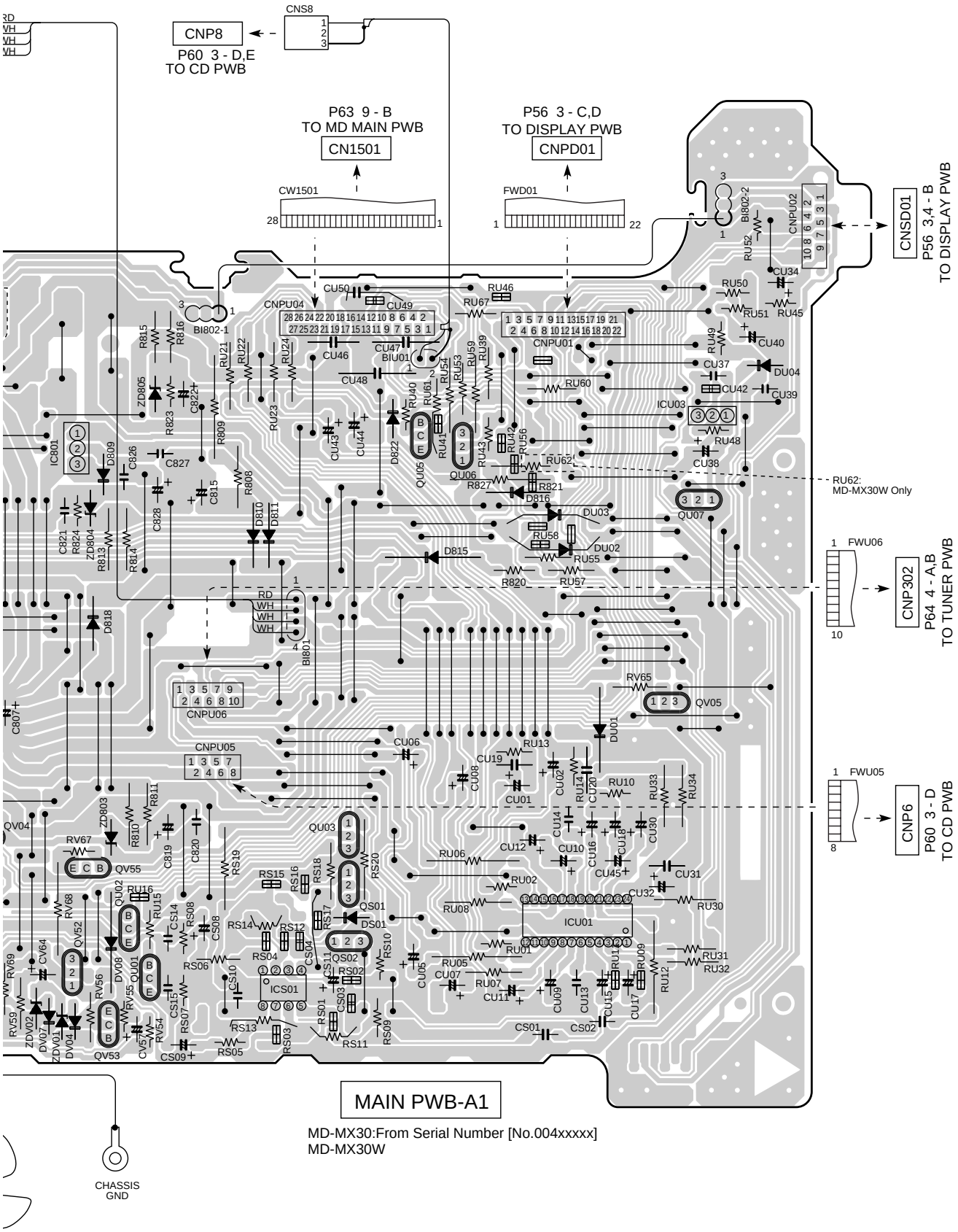


Figure 52 WIRING SIDE OF P.W.BOARD (3/15)



7	8	9	10	11	12

Figure 53 WIRING SIDE OF P.W.BOARD (4/15)

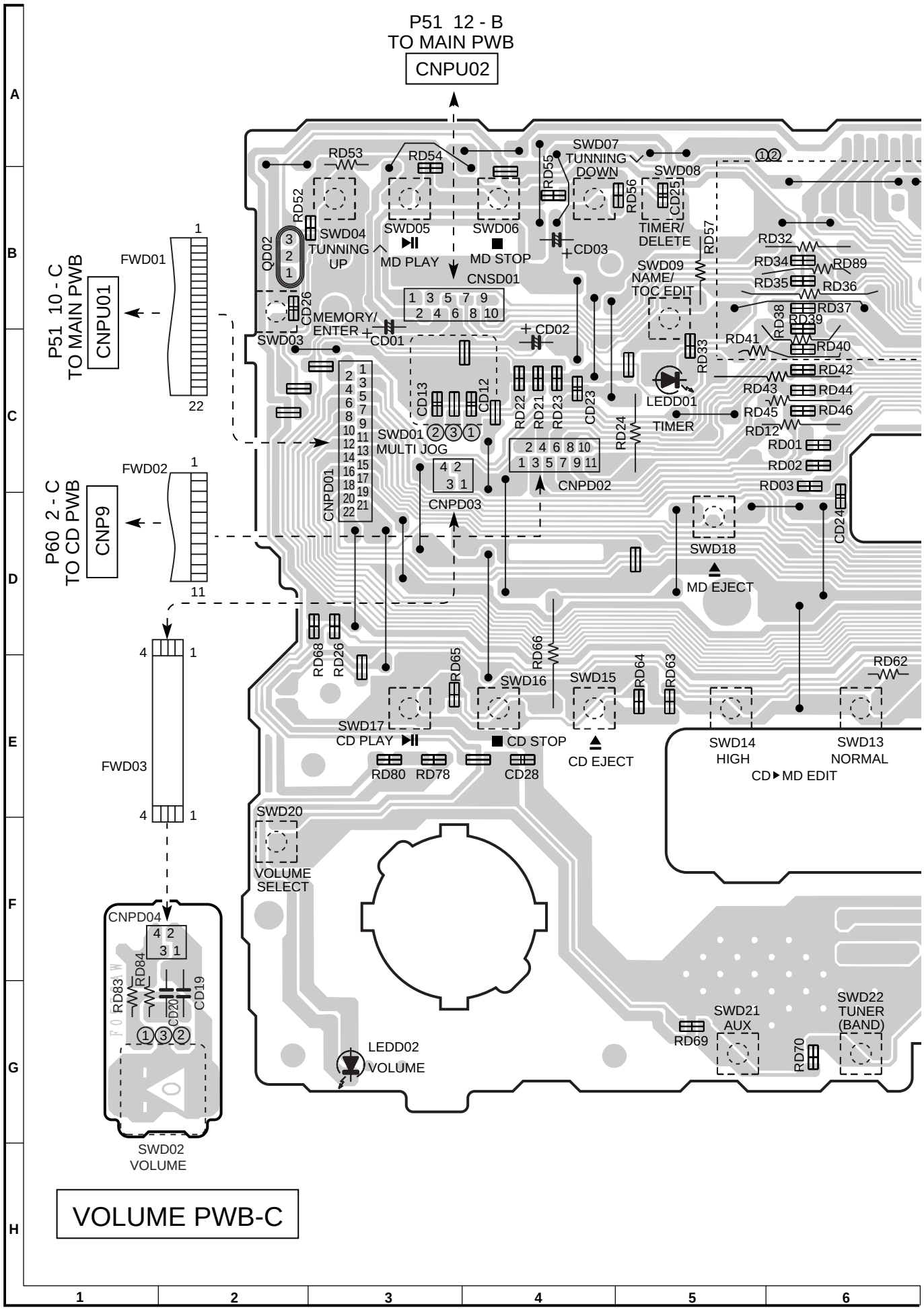
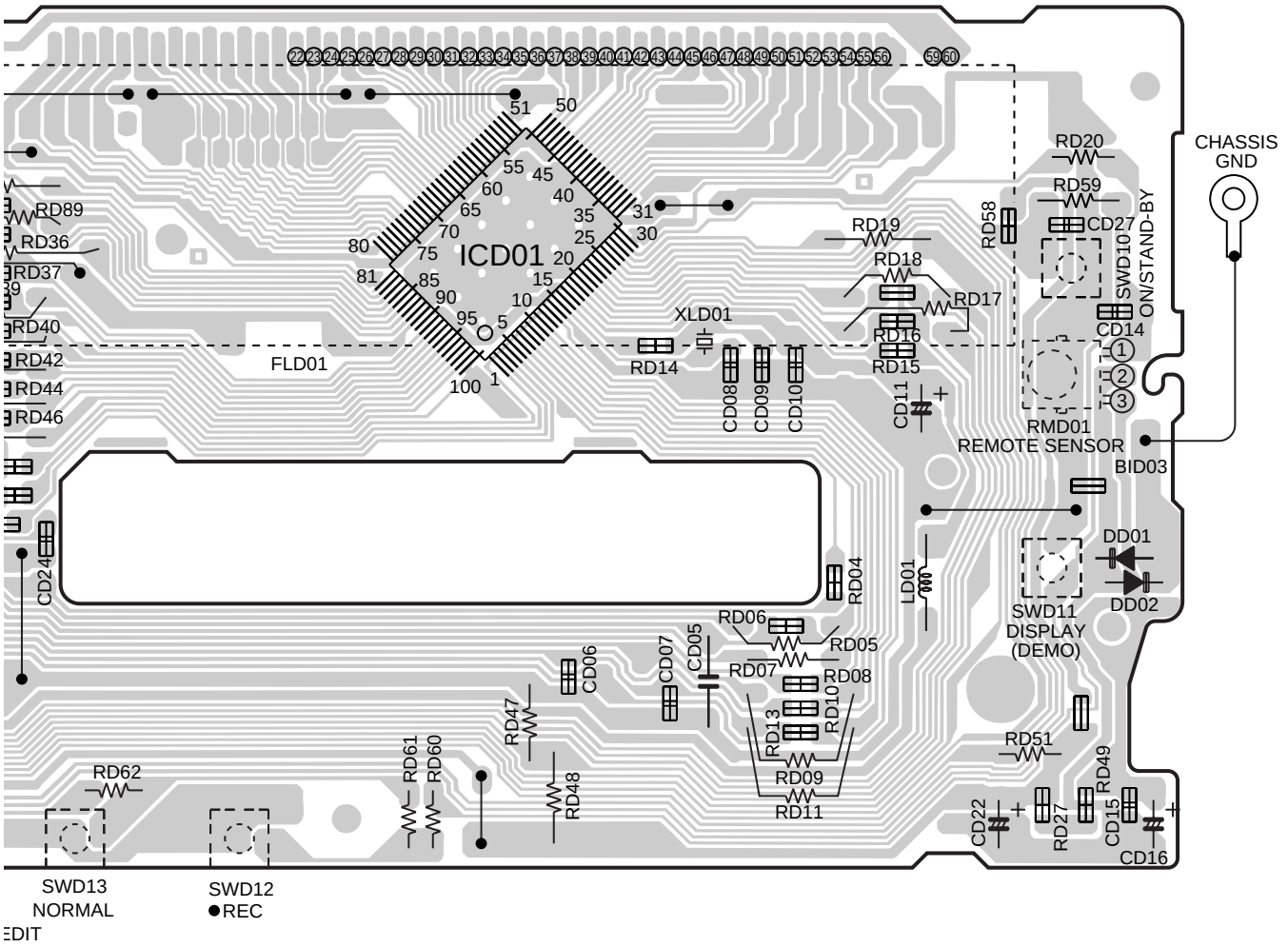
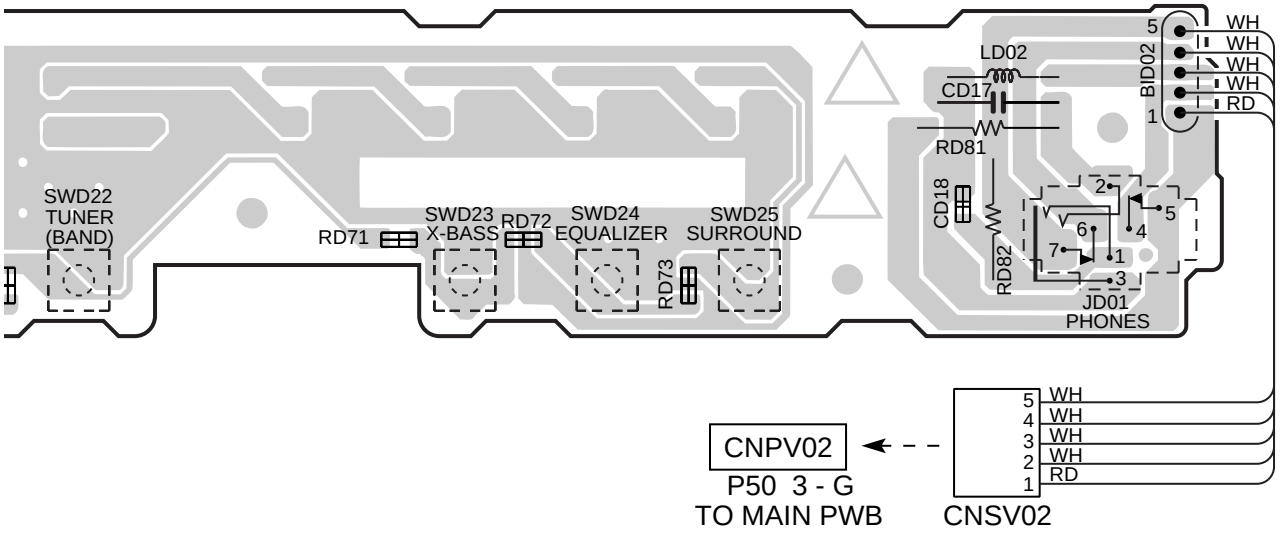


Figure 54 WIRING SIDE OF P.W.BOARD (5/15)

DISPLAY PWB-B1

MD-MX30 ONLY:
To Serial Number [No.003xxxxx]





7	8	9	10	11	12

Figure 55 WIRING SIDE OF P.W.BOARD (6/15)

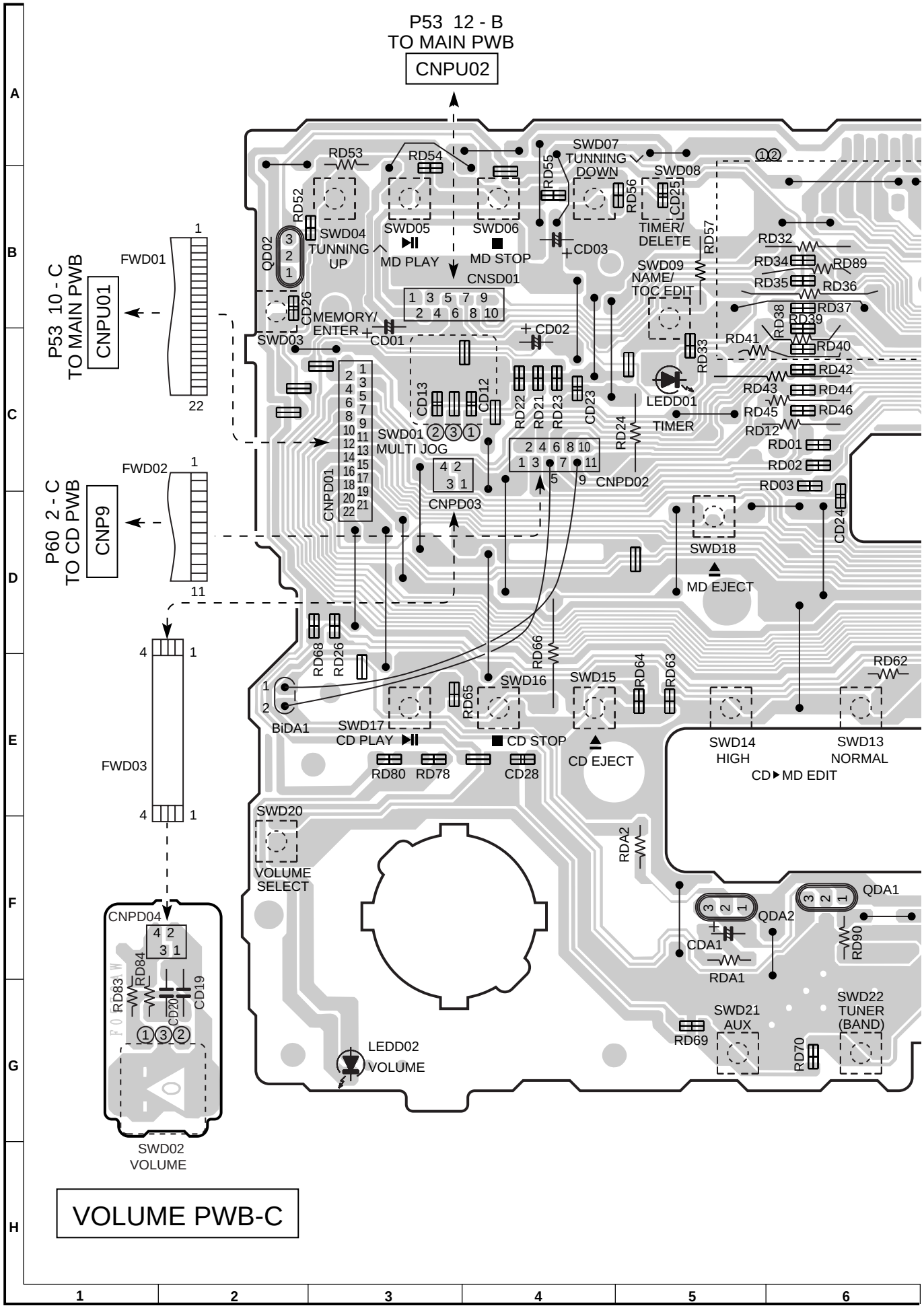
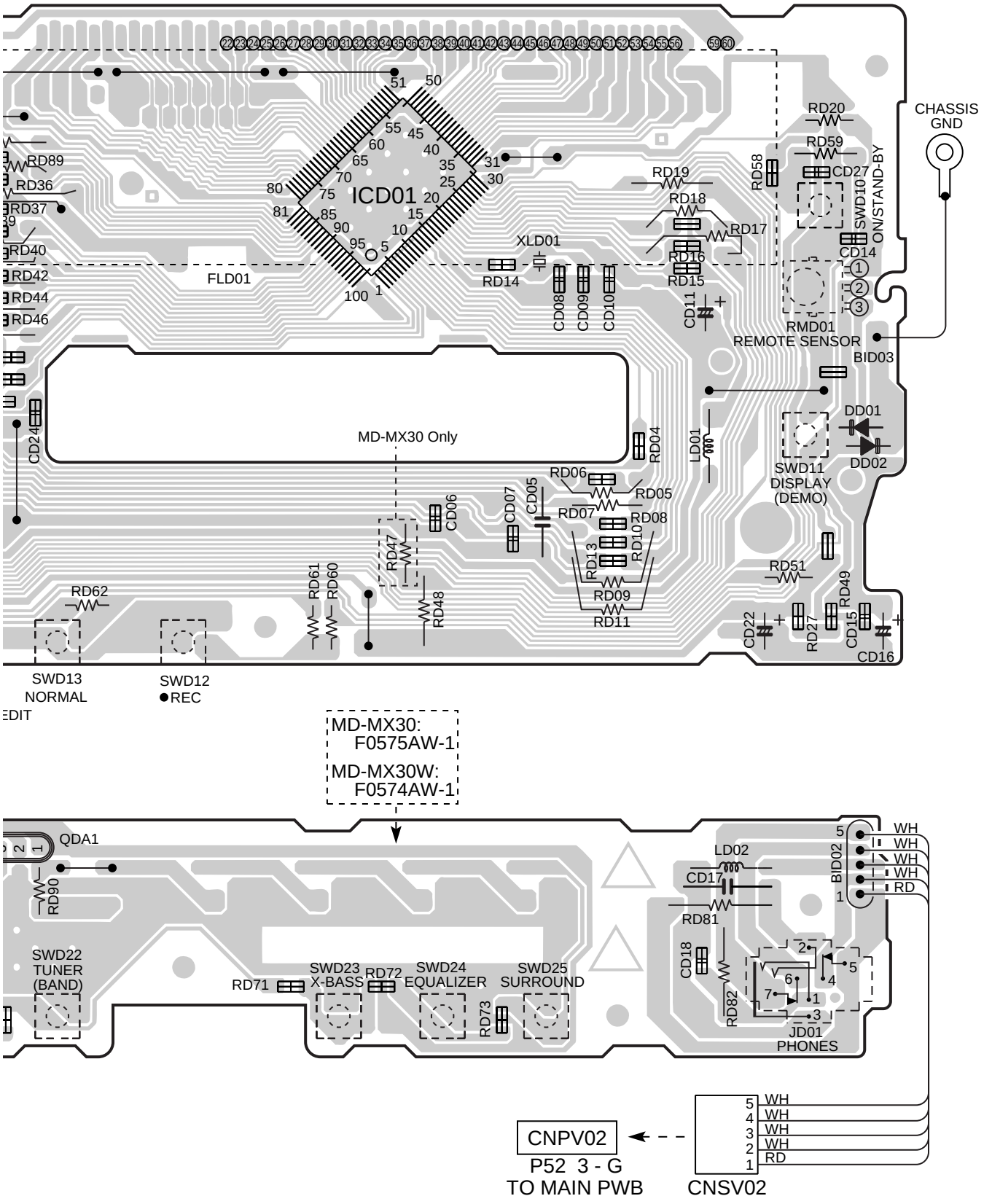


Figure 56 WIRING SIDE OF P.W.BOARD (7/15)

DISPLAY PWB-B1

MD-MX30:From Serial Number [No.004xxxxx]
MD-MX30W



7	8	9	10	11	12

Figure 57 WIRING SIDE OF P.W.BOARD (8/15)

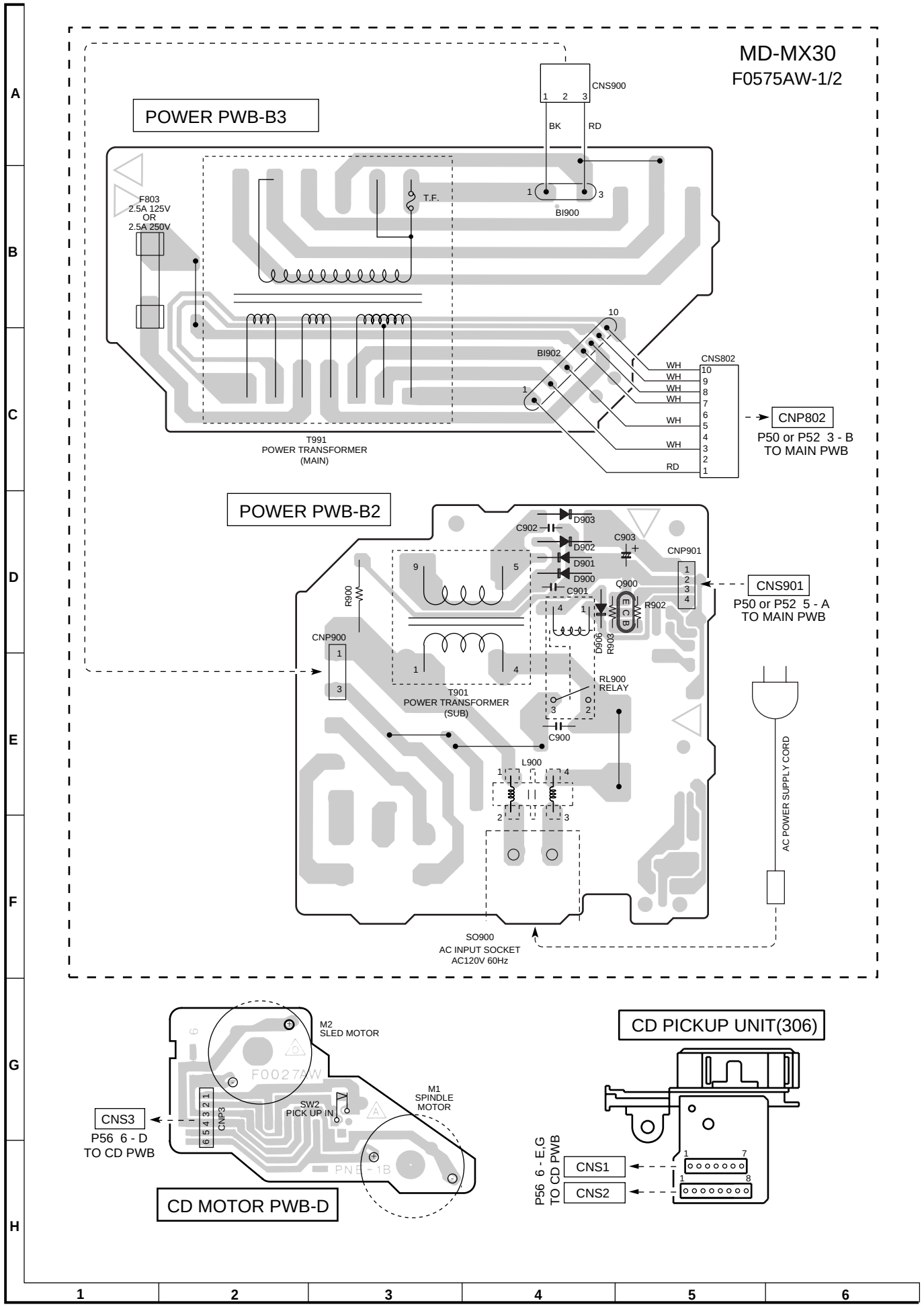


Figure 58 WIRING SIDE OF P.W.BOARD (9/15)

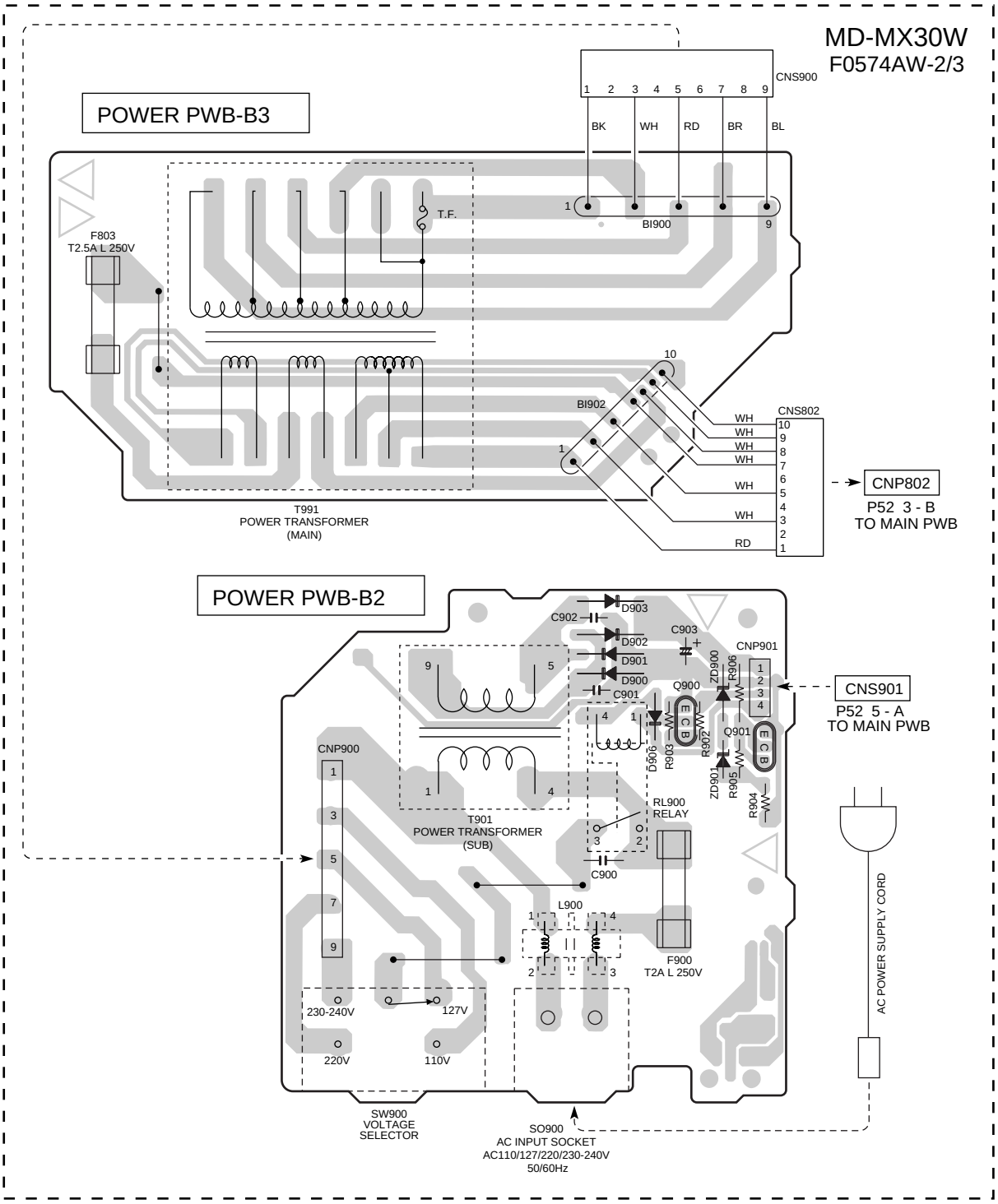
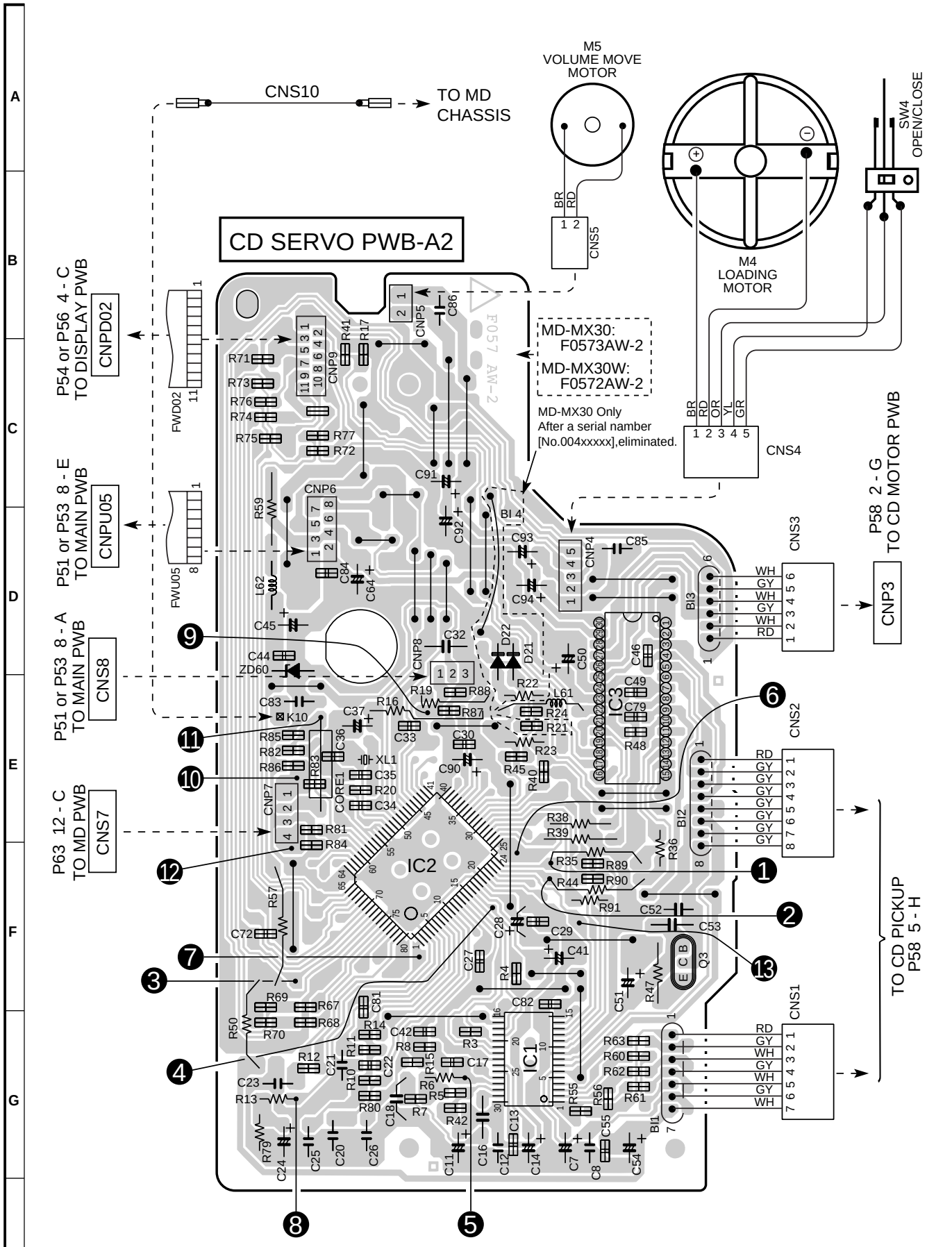


Figure 59 WIRING SIDE OF P.W.BOARD (10/15)



• The numbers ❶ to ⓭ are waveform numbers shown in page 65.

Figure 60 WIRING SIDE OF P.W.BOARD (11/15)

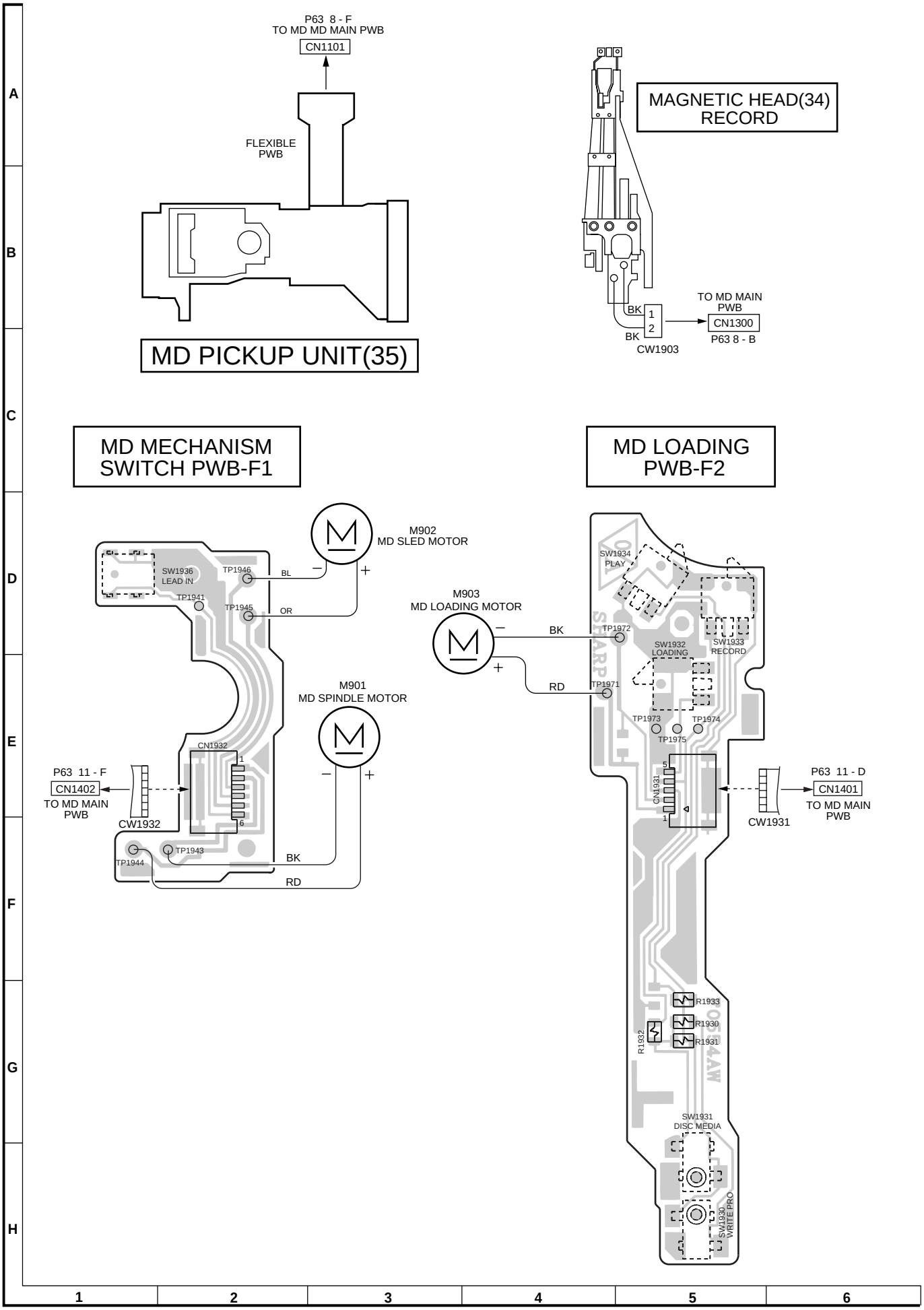
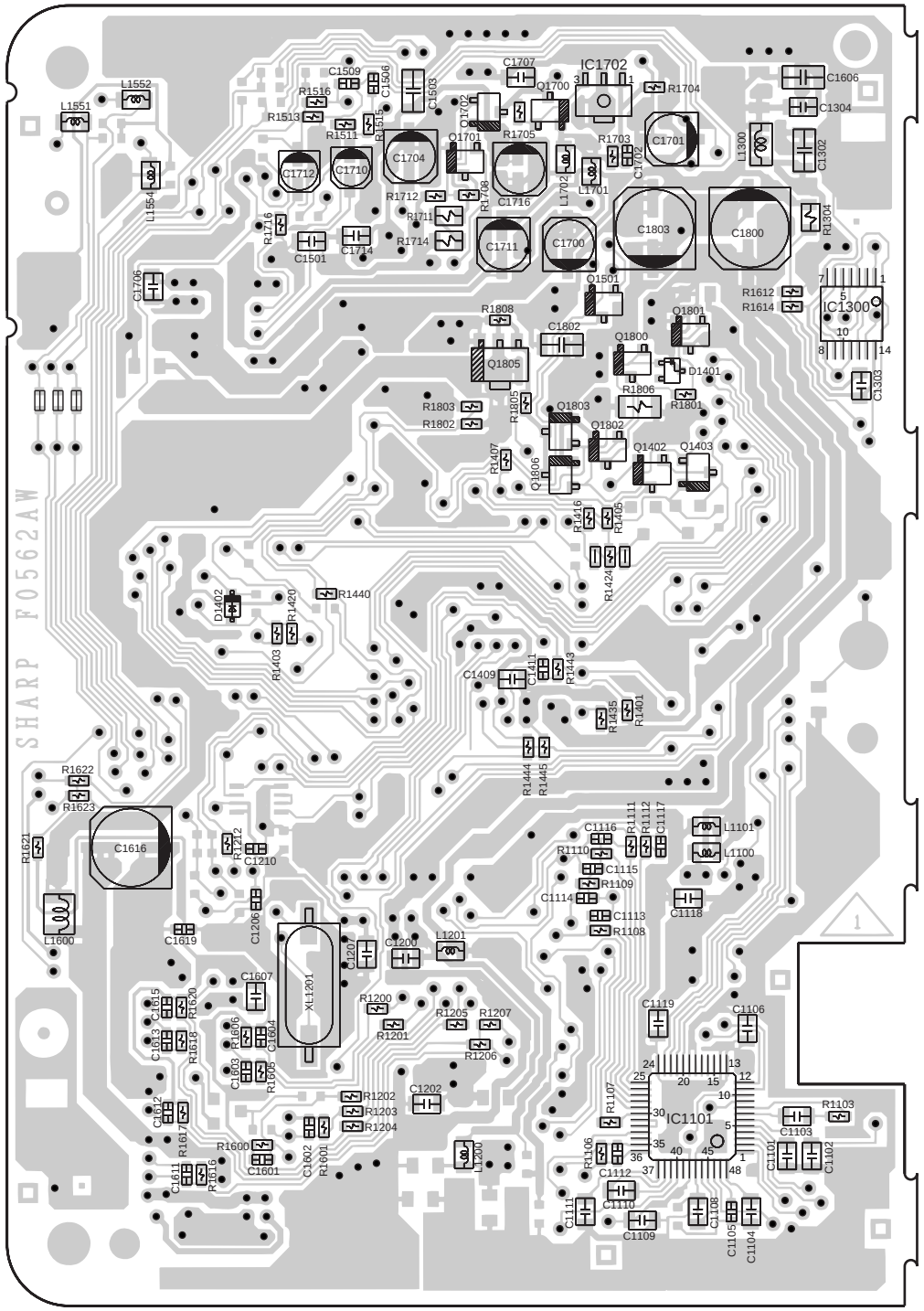


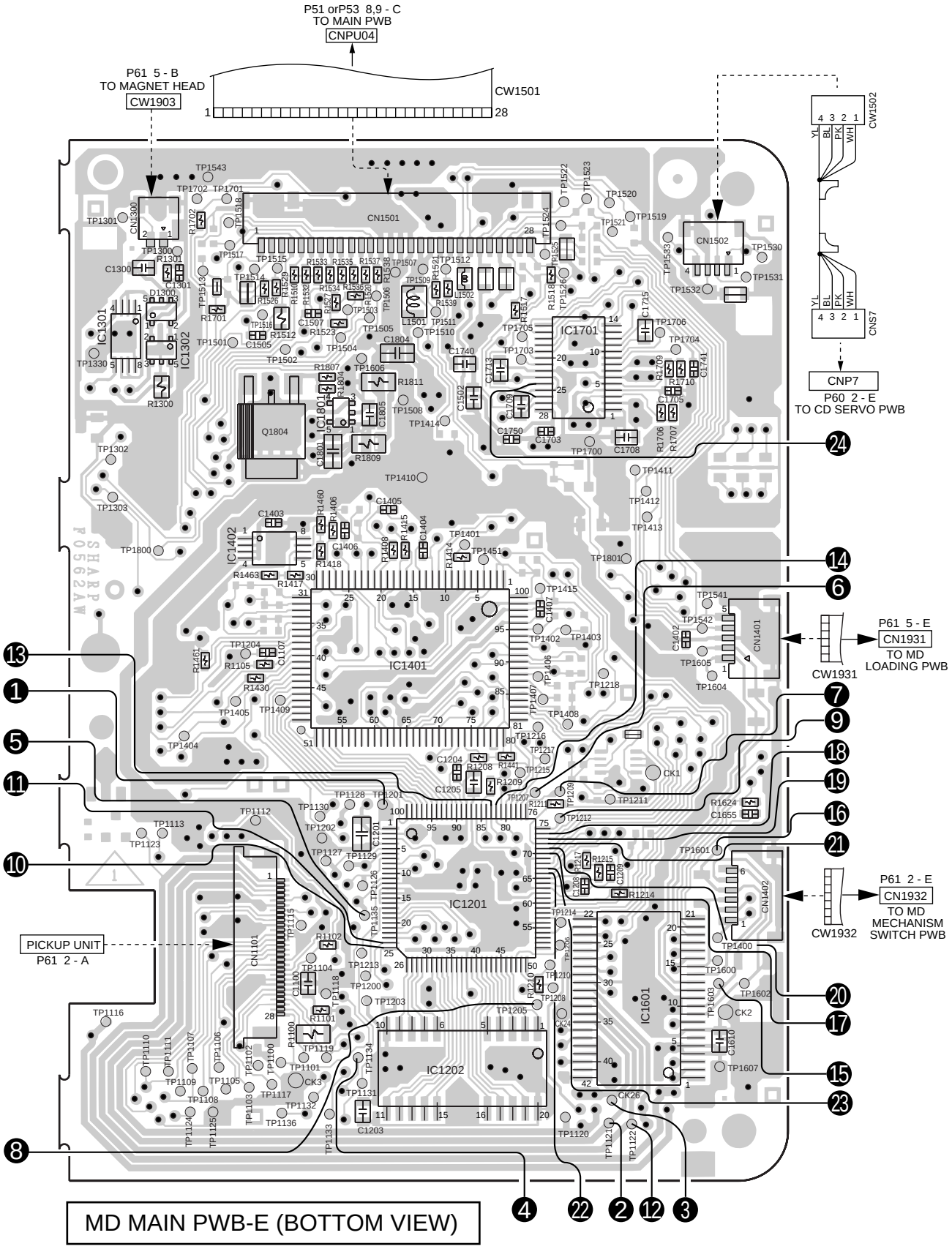
Figure 61 WIRING SIDE OF P.W.BOARD (12/15)

● : Through-hole where the top and bottom patterns are connected.



MD MAIN PWB-E (TOP VIEW)

Figure 62 WIRING SIDE OF P.W.BOARD (13/15)



• The numbers ❶ to ㉔ are waveform numbers shown in page 66 and 67.

7	8	9	10	11	12

Figure 63 WIRING SIDE OF P.W.BOARD (14/15)

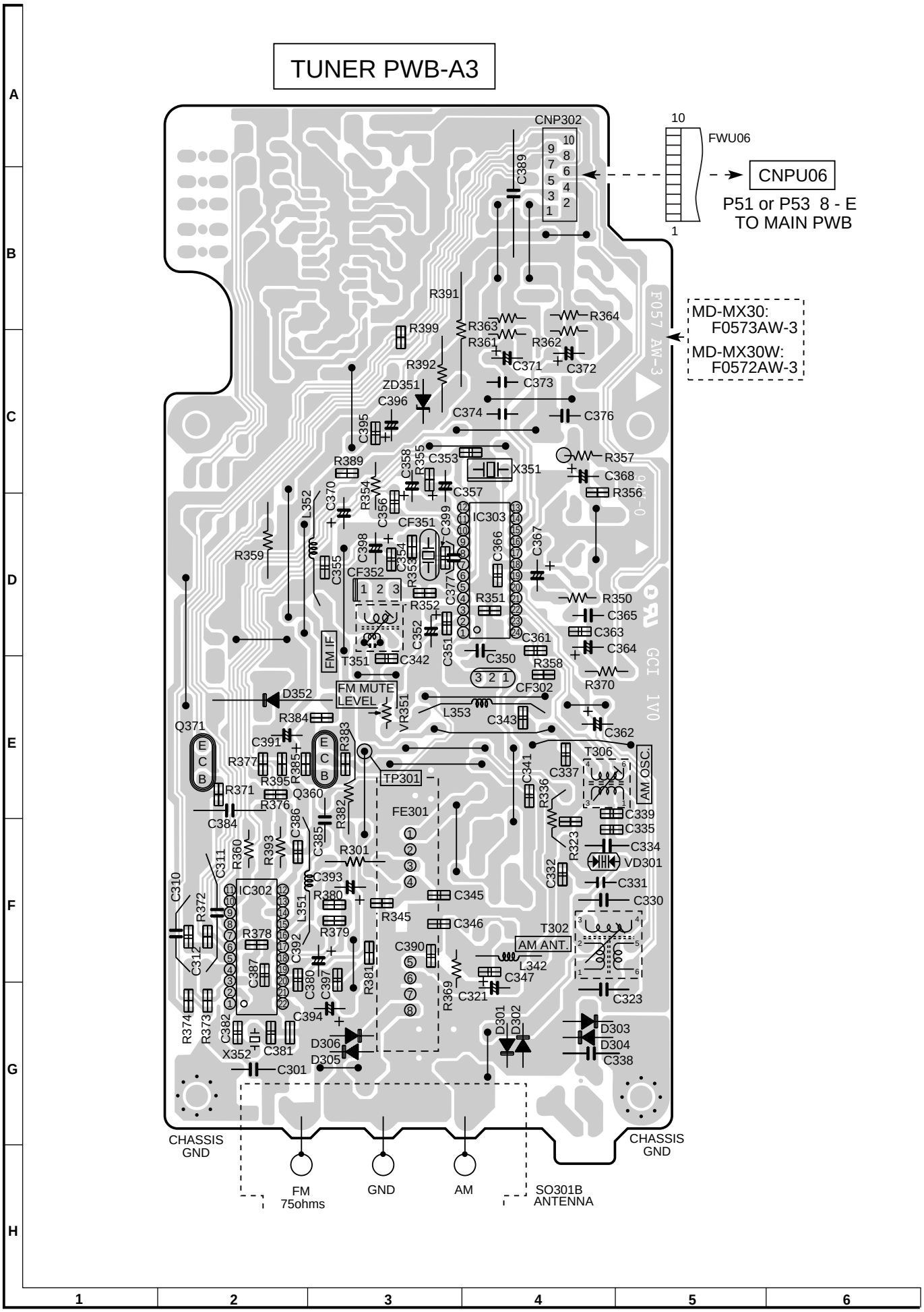
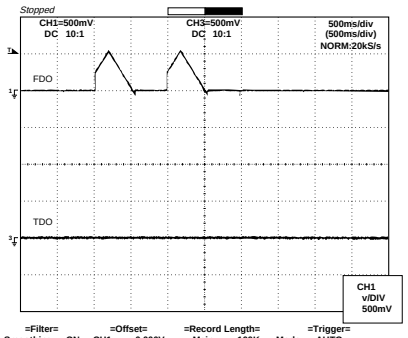


Figure 64 WIRING SIDE OF P.W.BOARD (15/15)

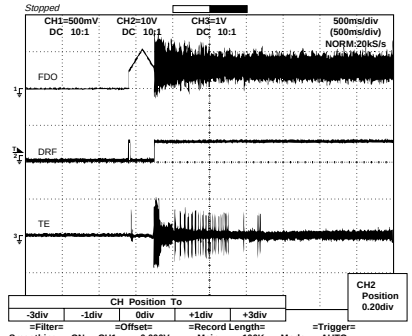
WAVEFORMS OF CD CIRCUIT

1 IC2 (24)
2 IC2 (23)



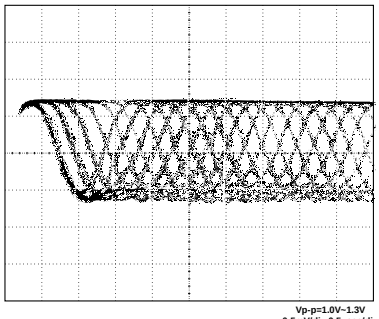
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : AUTO
BW : FULL	CH2 : 0.0V	Zoom : 2K	Type : EDGE CH1
	CH3 : 0.000V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

1 IC2 (24)
3 IC2 (72)
4 IC1 (18), IC2 (16)



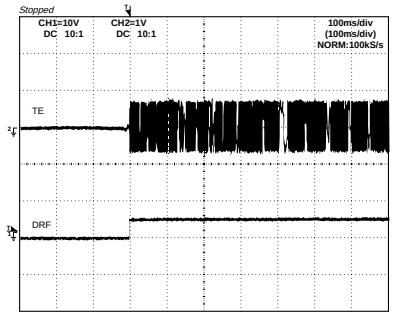
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : AUTO
BW : FULL	CH2 : 0.0V	Zoom : 2K	Type : EDGE CH1
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

5 IC1 (27)



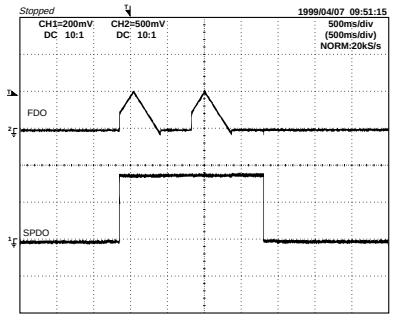
Vp-p=1.0V~1.3V
0.5mV/div,0.5μsec/div

4 IC1 (18), IC2 (16)
3 IC2 (72)



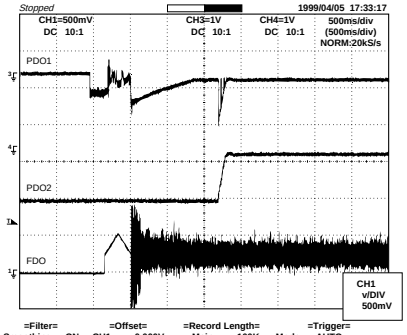
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.0V	Main : 100K	Mode : NORMAL
BW : FULL	CH2 : 0.00V	Zoom : 2K	Type : EDGE CH1
	CH3 : 0.00V		Delay : 2.924ms
	CH4 : 0.00V		Hold off : 0.2us

1 IC2 (24)
6 IC2 (25)



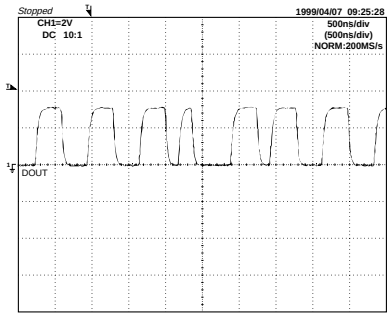
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : NORMAL
BW : FULL	CH2 : 0.000V	Zoom : 2K	Type : EDGE CH2
	CH3 : 0.00V		Delay : 2.924ms
	CH4 : 0.00V		Hold off : 0.2us

7 IC2 (1)
8 IC2 (2)
1 IC2 (24)



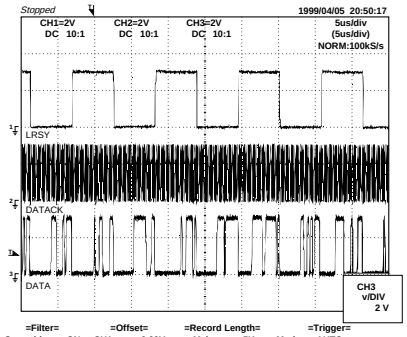
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : AUTO
BW : FULL	CH2 : 0.0V	Zoom : 2K	Type : EDGE CH2
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

9 R87,88



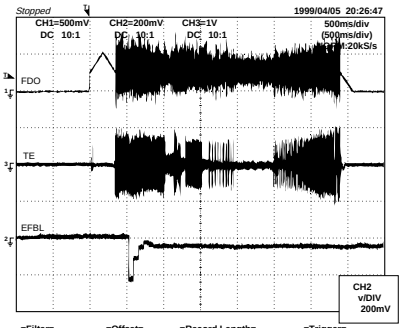
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.00V	Main : 1K	Mode : NORMAL
BW : FULL	CH2 : 0.00V	Zoom : 100	Type : EDGE CH1
	CH3 : 0.00V		Delay : 2.887ms
	CH4 : 0.00V		Hold off : 0.2us

10 CNP7 (1)
11 CNP7 (2)
12 CNP7 (4)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.00V	Main : 5K	Mode : AUTO
BW : FULL	CH2 : 0.00V	Zoom : 100	Type : EDGE CH3
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

1 IC2 (24)
4 IC1 (18), IC2 (16)
13 IC1 (13), IC2 (22)

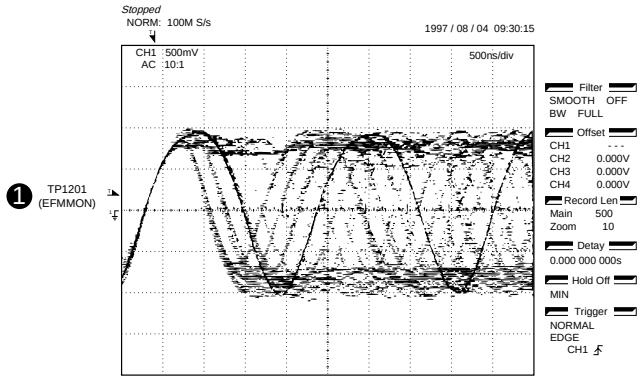


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000V	Main : 100K	Mode : SINGLE
BW : FULL	CH2 : 0.000V	Zoom : 2k	Type : EDGE CH1
	CH3 : 0.00V		Delay : 0.0ns
	CH4 : 0.00V		Hold off : 0.2us

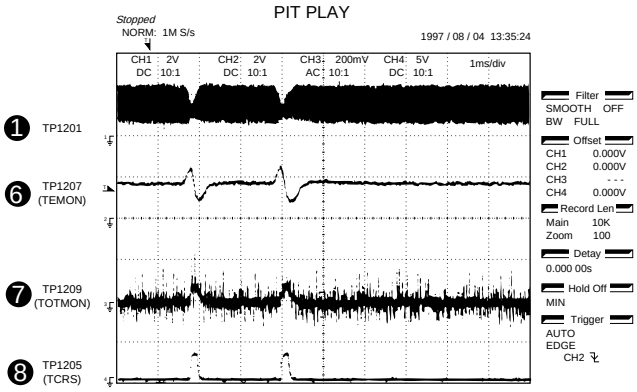
Tracking Balance Adjust(EFBL)

WAVEFORMS OF MD CIRCUIT

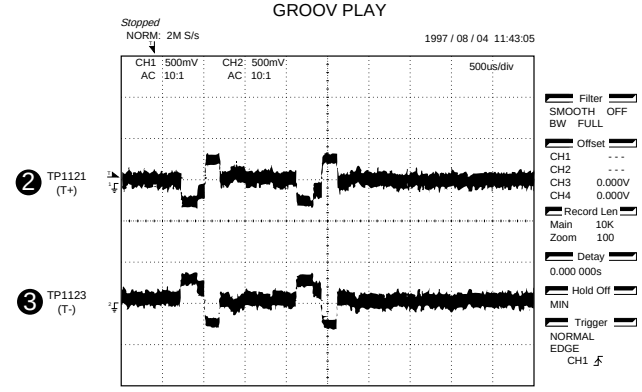
PLAY STATE



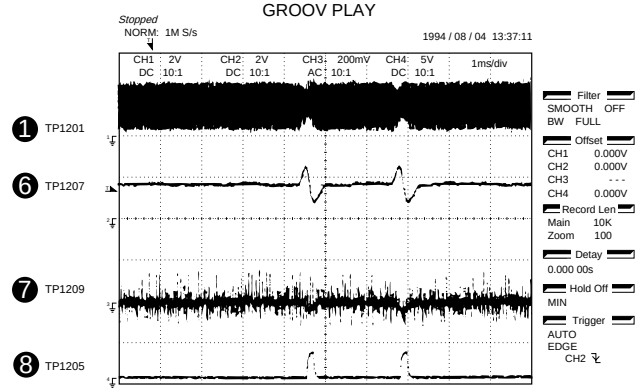
PIT PLAY



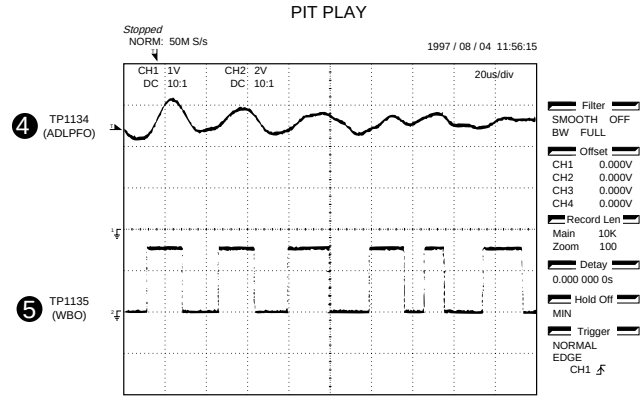
GROOV PLAY


Stopped
NORM: 2M S/s
1997 / 08 / 04 11:43:05
CH1 500mV AC 10:1
CH2 500mV AC 10:1
500us/div
2 TP1121 (T+)
3 TP1123 (T-)
Filter SMOOTH OFF BW FULL
Offset CH1 - - - CH2 - - - CH3 0.000V CH4 0.000V
Record Len Main 10K Zoom 100
Detay 0.000 000s
Hold Off MIN
Trigger NORMAL EDGE CH1

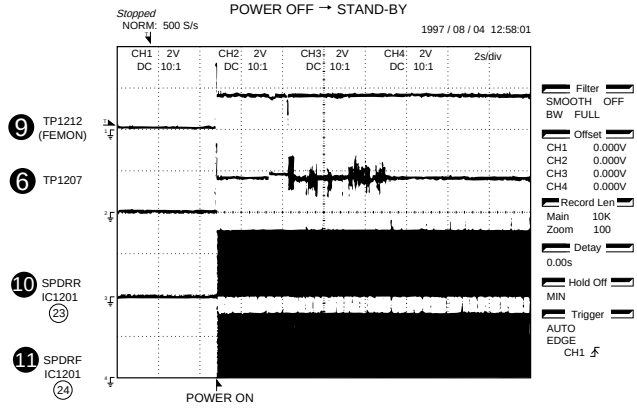
GROOV PLAY



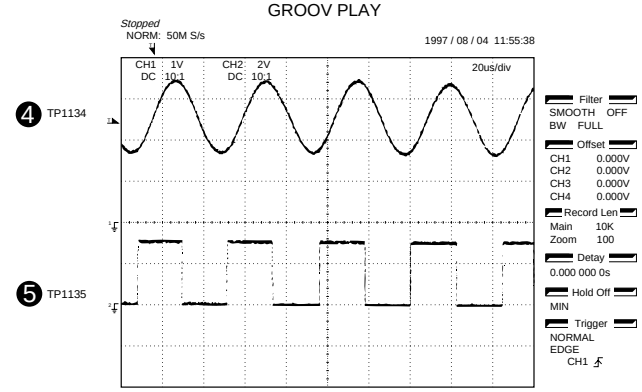
PIT PLAY


Stopped
NORM: 50M S/s
1997 / 08 / 04 11:56:15
CH1 1V DC 10:1
CH2 2V DC 10:1
20us/div
4 TP1134 (ADLPFO)
5 TP1135 (WBO)
Filter SMOOTH OFF BW FULL
Offset CH1 0.000V CH2 0.000V CH3 0.000V CH4 0.000V
Record Len Main 10K Zoom 100
Detay 0.000 000 0s
Hold Off MIN
Trigger NORMAL EDGE CH1

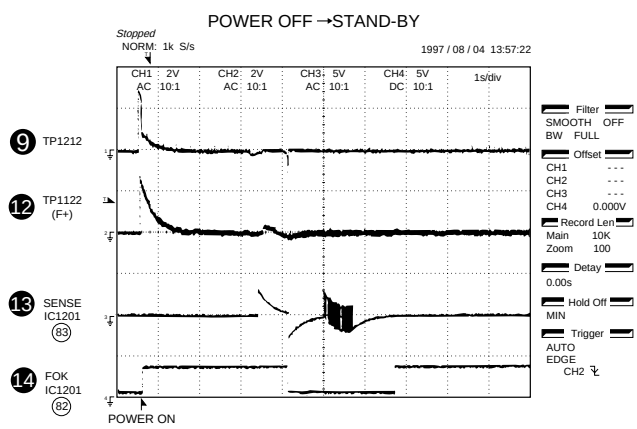
POWER OFF → STAND-BY

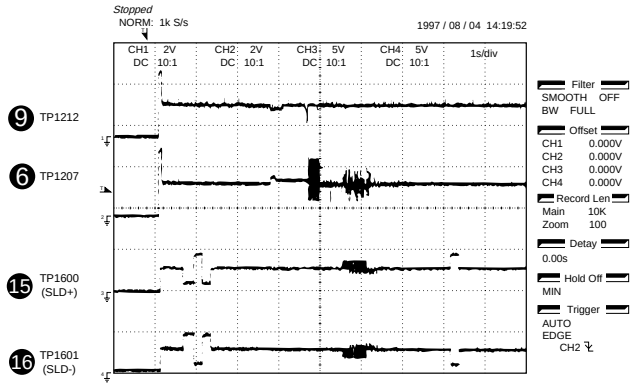


GROOV PLAY

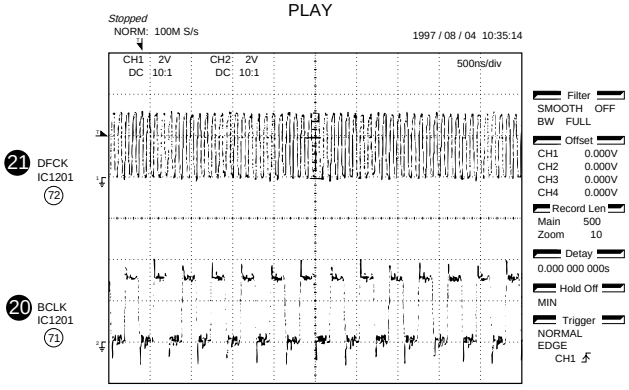


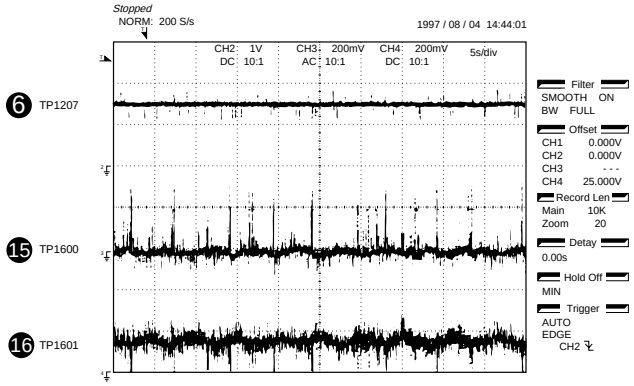
POWER OFF →STAND-BY


Stopped
NORM: 1k S/s
1997 / 08 / 04 13:57:22
CH1 2V AC 10:1
CH2 2V AC 10:1
CH3 5V AC 10:1
CH4 5V DC 10:1
1s/div
9 TP1212
12 TP1122 (F+)
13 SENSE IC1201 (83)
14 FOK IC1201 (82)
POWER ON
Filter SMOOTH OFF BW FULL
Offset CH1 - - - CH2 - - - CH3 - - - CH4 0.000V
Record Len Main 10K Zoom 100
Detay 0.00s
Hold Off MIN
Trigger AUTO EDGE CH2

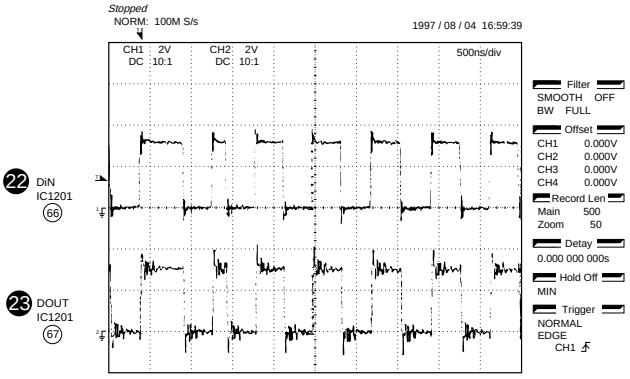


PLAY

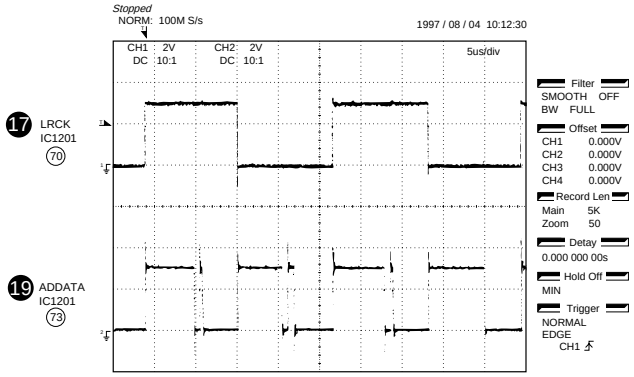

Stopped
NORM: 100M S/s
1997 / 08 / 04 10:35:14
CH1 2V DC 10:1
CH2 2V DC 10:1
500ns/div
21 DFCK IC1201 (72)
20 BCLK IC1201 (71)
Filter SMOOTH OFF BW FULL
Offset CH1 0.000V CH2 0.000V CH3 0.000V CH4 0.000V
Record Len Main 500 Zoom 10
Detay 0.000 000 000s
Hold Off MIN
Trigger NORMAL EDGE CH1



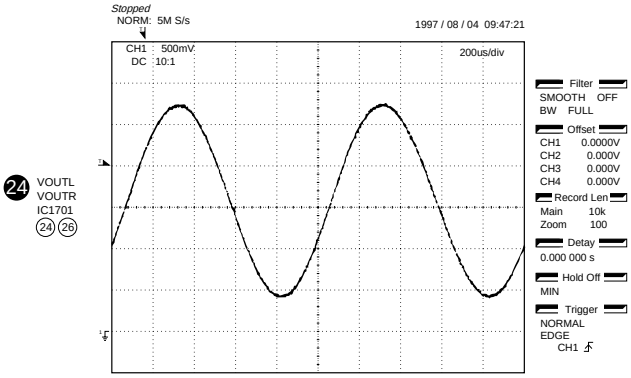
DIGITAL REC


Stopped
NORM: 100M S/s
1997 / 08 / 04 16:59:39
CH1 2V DC 10:1
CH2 2V DC 10:1
500ns/div
22 DiN IC1201 (66)
23 DOUT IC1201 (67)
Filter SMOOTH OFF BW FULL
Offset CH1 0.000V CH2 0.000V CH3 0.000V CH4 0.000V
Record Len Main 500 Zoom 50
Detay 0.000 000 000s
Hold Off MIN
Trigger NORMAL EDGE CH1

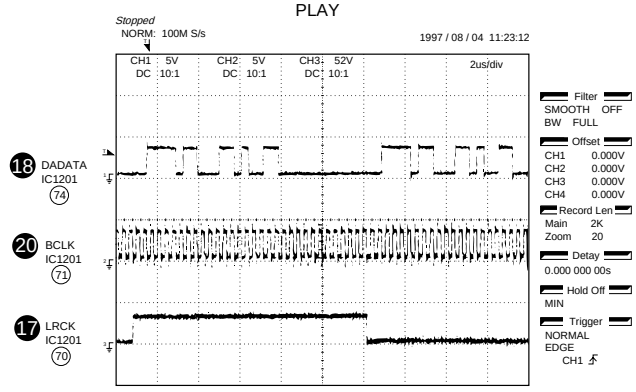
A/D CONVERSION ANALOG REC (NO SIGNAL)


Stopped
NORM: 100M S/s
1997 / 08 / 04 10:12:30
CH1 2V DC 10:1
CH2 2V DC 10:1
5us/div
17 LRCK IC1201 (70)
19 ADDATA IC1201 (73)
Filter SMOOTH OFF BW FULL
Offset CH1 0.000V CH2 0.000V CH3 0.000V CH4 0.000V
Record Len Main 5K Zoom 50
Detay 0.000 000 00s
Hold Off MIN
Trigger NORMAL EDGE CH1

PLAYBACK (1 kHz 0dB)


Stopped
NORM: 5M S/s
1997 / 08 / 04 09:47:21
CH1 500mV DC 10:1
200us/div
24 VOUTL VOUTR IC1701 (24) (26)
Filter SMOOTH OFF BW FULL
Offset CH1 0.000V CH2 0.000V CH3 0.000V CH4 0.000V
Record Len Main 10k Zoom 100
Detay 0.000 000 s
Hold Off MIN
Trigger NORMAL EDGE CH1

PLAY


Stopped
NORM: 100M S/s
1997 / 08 / 04 11:23:12
CH1 5V DC 10:1
CH2 5V DC 10:1
CH3 52V DC 10:1
2us/div
18 DADATA IC1201 (74)
20 BCLK IC1201 (71)
17 LRCK IC1201 (70)
Filter SMOOTH OFF BW FULL
Offset CH1 0.000V CH2 0.000V CH3 0.000V CH4 0.000V
Record Len Main 2K Zoom 20
Detay 0.000 000 00s
Hold Off MIN
Trigger NORMAL EDGE CH1

TROUBLE SHOOTING

CD SECTION

When the CD does not function

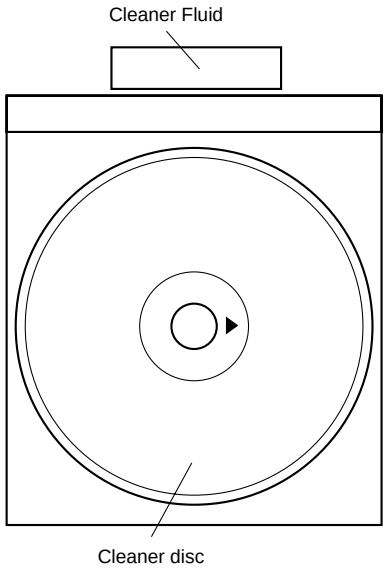
When the CD section does not operate when the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.
Remove the cabinet and follow the troubleshooting instructions.
"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

Turn the power off.
Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.
Do not touch the lens with the bare hand.

		Parts code
1.	CD optical pickup Lens cleaner disc	UDSKA0004AFZZ

HOW TO USE

1. Using the brush in the cleaner cap, apply 1 or 2 drops of the cleaning fluid to the brush on the CD cleaner disc which has the mark next to it.
2. Place the CD cleaner disc onto the CD disc tray with the brush side down,then press the play button.
3. You will hear music for about 20 seconds and the CD player will automatically stop. If it continuse to tum,press the stop button.



CAUTION

- The CD lens cleaner should be effective for 30-50 operations, however if the brushes become worn out earlier then please the cleaner disc.
- If the CD cleaner brushes becom very wet then wipe off any excess fluid with a soft cloth.
- Do not drink the cleaner fluid or allow it to come in contact with the eyes. In the event of this happening then drink and / or rines with clean water and seek medical advice.
- The CD cleaner disk must not be used on car CD players or on computer CD ROM drives.
- All rights reserved.Unauthorized duplicating, broadcasting and renting this product is

When a CD cannot be played

1. "E-CD01" is displayed.

(1) Check the power to IC2 (LA78641E), the presence of the clock signal (16.93 MHz) and the status of the RESET terminal (pin 70 on IC2).
(2) Did the pickup move to the PICKUP-IN Switch (SW2) position?

If (1) and (2) are OK, check the system microcomputer (especially the communication line with the DSP).

2. Pressing the CD operation key is accepted, but playback does not occur.

(1) Focus-HF system check
(2) Tracking system check
(3) Spin system check
(4) PLL system check
(5) Others

(1) Focus-HF system check

"NO DISC"appears when you load a disc and close the tray.

Playback operation starts even if no disc is loaded.

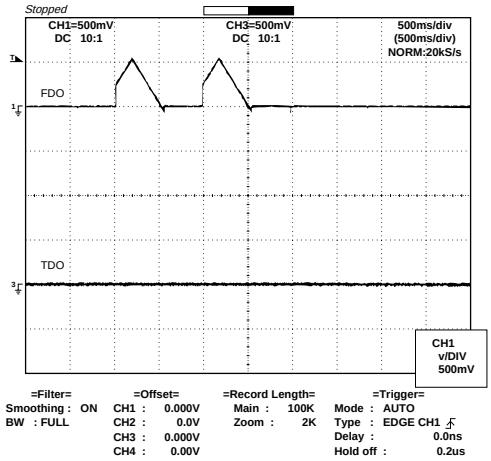


Figure 69-1

1. Did the pickup move to the PICKUP-IN Switch (SW2) position?
   - No → Sled motor (M2)
   - Yes ↓
2. Does the focus (lens) move up and down? (Waveform drawing 69-1).
   - No → Check the focus peripheral circuit.
   - Yes ↓
3. Is the laser lit?
   - No → Check the laser diode driver Q3 peripheral circuit.
   - Yes ↓
4. Is the turntable rotating?
   - No → Spindle motor (M1).

When a disc is loaded, start playback operation.

1. Is focus servo activated? (Waveform drawing 69-2)
   - No → Pins 1~11 on IC1
     Check the laser diode driver Q3 peripheral circuit.
     Focus error circuit (pins 20 and 21 on IC1)
   - Yes ↓
2. Does DRF change from "L" to "H"?
   - No → Is the disc rotating?
     - No → Check the spin system.
       If the disc is spinning and a HF waveform is generated, DRF will go H.
     - Yes
   - Yes ↓
3. Is the HF waveform normal? (Waveform drawing 69-3)
   - No → If the level is not normal, check around pins 27~29 on IC1.

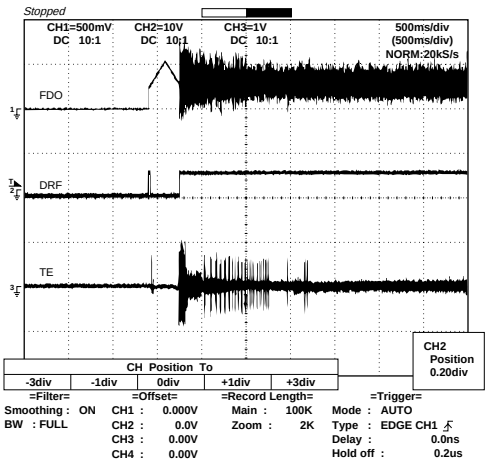


Figure 69-2

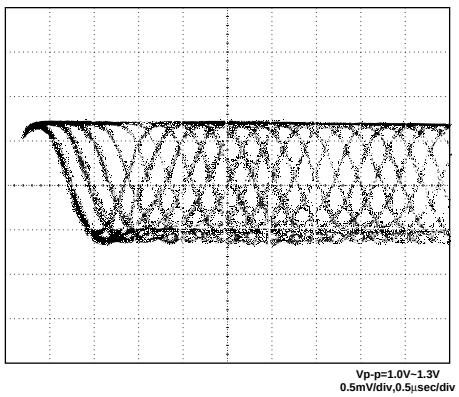


Figure 69-3

(2) Tracking system check

Check the TE waveform at pin 18 on IC1.

If the waveform shown in Figure 70-1 appears and soon after NO DISC appears.
- No → The tracking servo is not activated. Check the peripheral circuits at pins 18 and 19 on IC1, pin 23 on IC2, and Bi2.
- Yes ↓

"IL" is possible, but play is not possible.
- No → A normal jump operation cannot be completed or the beginning of the track cannot be found. Check the around pin 23 on IC2.
- Yes ↓

"IL" is not possible.
- No → Data cannot be read. Check the VCO-PLL system.

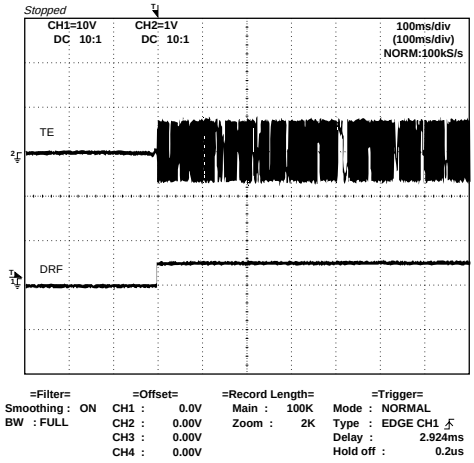

Stopped
CH1=10V DC 10:1
CH2=1V DC 10:1
100ms/div (100ms/div) NORM:100kS/s
TE
DRF
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.0V CH2 : 0.00V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : NORMAL Type : EDGE CH1 Delay : 2.924ms Hold off : 0.2us

Figure 70-1

(3) Spin system check

Press the LID switch without inserting a disc, and then try starting the play operation.

1. The turntable rotates a little. (Waveform drawing 70-2)
- No → Check the spin driver circuit.
- Yes ↓

2. The turntable doesn't rotate.
- Yes → Check around pin 25 on IC2, pins 27 and 28 on IC3, and BI3.

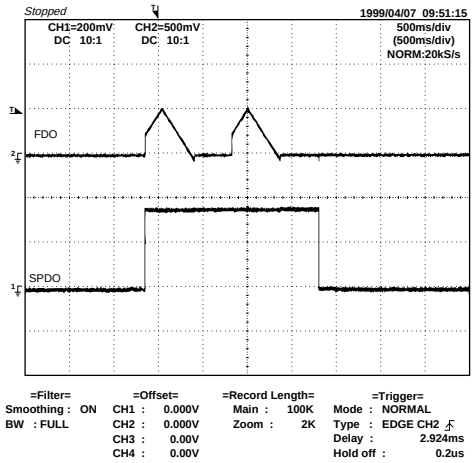

Stopped
1999/04/07 09:51:15
CH1=200mV DC 10:1
CH2=500mV DC 10:1
500ms/div (500ms/div) NORM:20kS/s
FDO
SPDO
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.000V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : NORMAL Type : EDGE CH2 Delay : 2.924ms Hold off : 0.2us

Figure 70-2

(4) PLL system check

When a disc is loaded, start play operation.

↓

The HF waveform is normal, but the TOC data cannot be read.

↓

Check the PDO waveform. (Figure 71-1)

↓

Check around pins 1~6 on IC2.

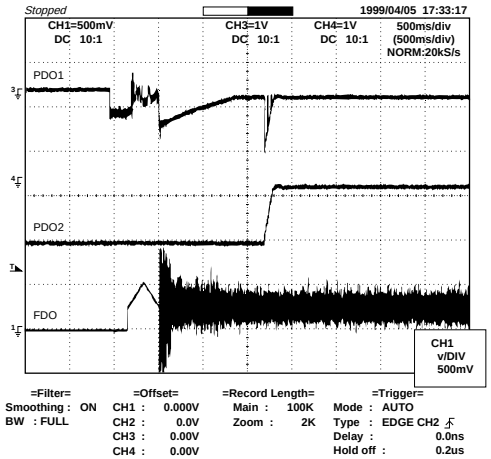

Stopped
1999/04/05 17:33:17
CH1=500mV DC 10:1
CH3=1V DC 10:1
CH4=1V DC 10:1
500ms/div (500ms/div) NORM:20kS/s
PDO1
PDO2
FDO
CH1 v/DIV 500mV
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000V CH2 : 0.0V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 100K Zoom : 2K
=Trigger= Mode : AUTO Type : EDGE CH2 Delay : 0.0ns Hold off : 0.2us

Figure 71-1

(5) Others

The HF waveform is normal and the time is displayed normally, but no sound is produced. Or the sound has dropouts.

Is pin 35 (C2F) on IC2 "L"?

No → There are too many error flags on a damaged disc which makes error correction impossible.

↓

Check again using a known good disc.

Yes

↓

1. When playing at normal speed
   Check the peripheral circuit at pin 37 (DOUT) on IC2 and the waveform (Figure 71-2).

↓

2. When recording at double speed
   Check the peripheral circuit at pins 57~59 (DATA, DATACK, LRSY) on IC2 and the waveform (Figure 71-3).

↓

If both 1. and 2. are OK, check the MD unit.

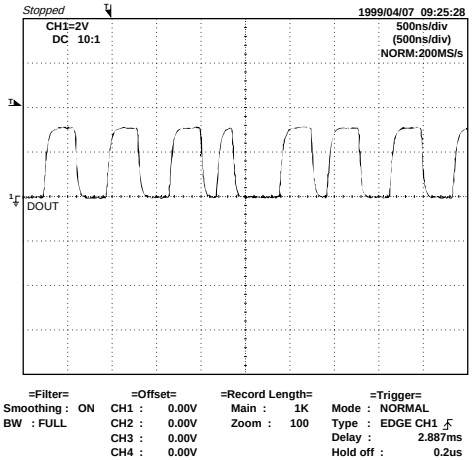

Stopped
1999/04/07 09:25:28
CH1=2V DC 10:1
500ns/div (500ns/div) NORM:200MS/s
DOUT
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.00V CH2 : 0.00V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 1K Zoom : 100
=Trigger= Mode : NORMAL Type : EDGE CH1 Delay : 2.887ms Hold off : 0.2us

Figure 71-2

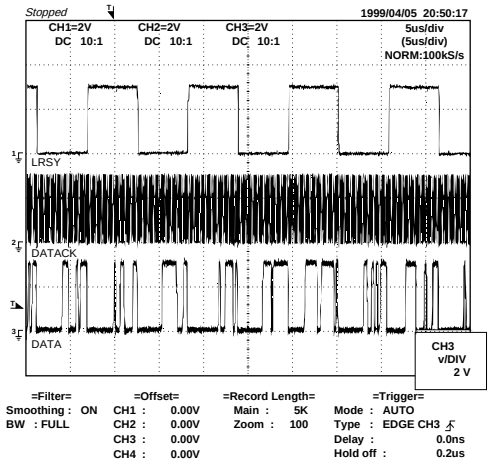

Stopped
1999/04/05 20:50:17
CH1=2V DC 10:1
CH2=2V DC 10:1
CH3=2V DC 10:1
5us/div (5us/div) NORM:100kS/s
LRSY
DATACK
DATA
CH3 v/DIV 2 V
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.00V CH2 : 0.00V CH3 : 0.00V CH4 : 0.00V
=Record Length= Main : 5K Zoom : 100
=Trigger= Mode : AUTO Type : EDGE CH3 Delay : 0.0ns Hold off : 0.2us

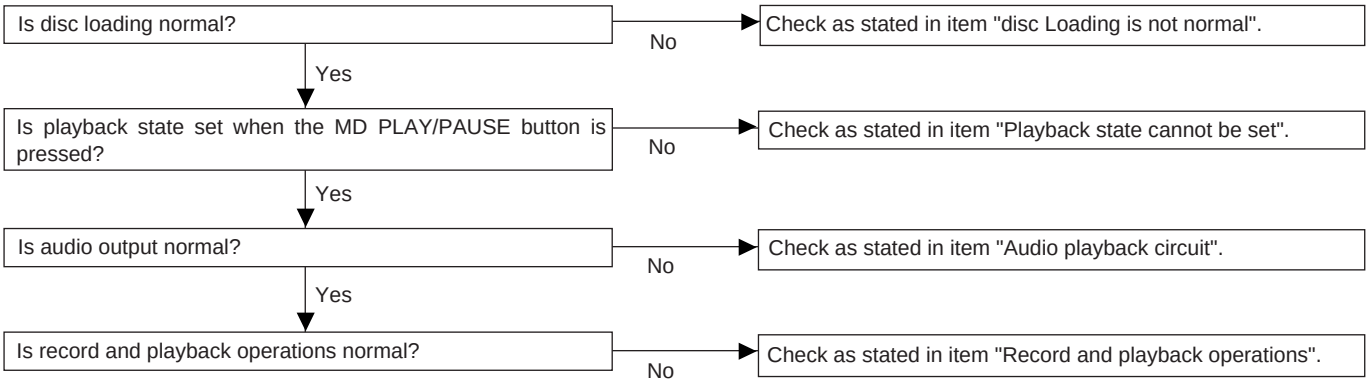
Figure 71-3

MD SECTION

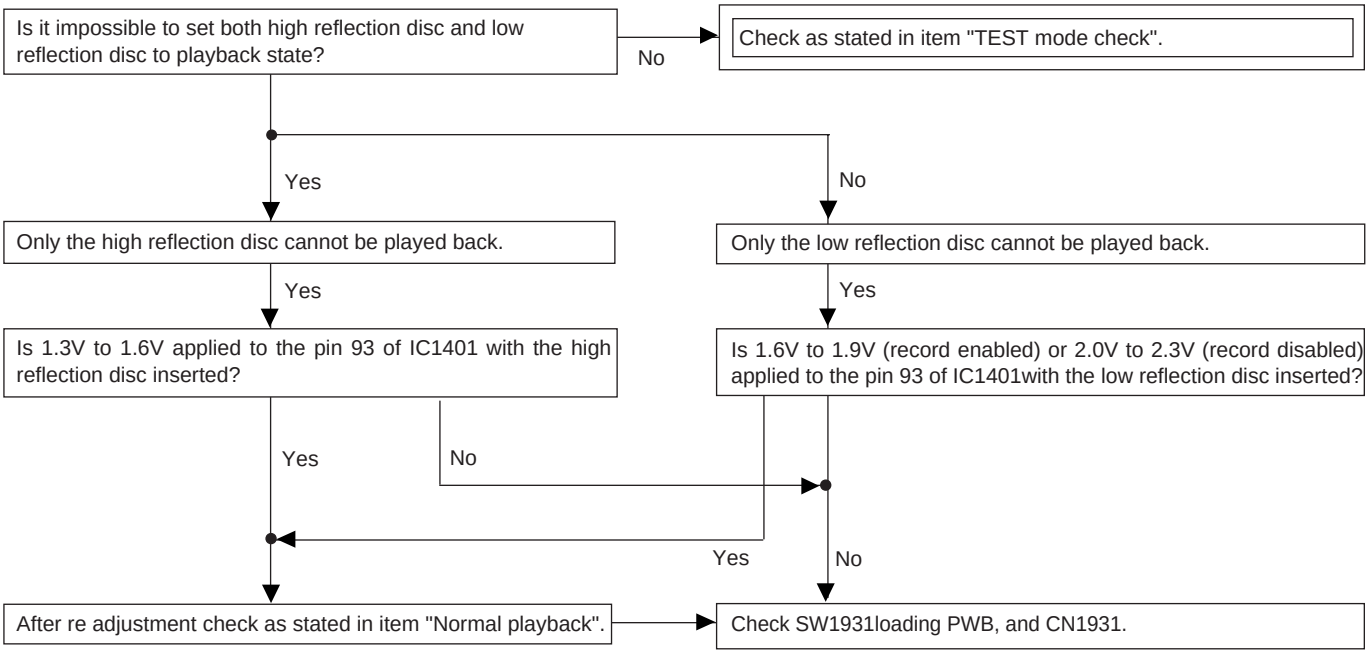
When MD fails to operate

If the objective lens of optical pickup is contaminated, MD may fail to operate. At first, clean the objective lens to check playback operation. If MD fails persistently to operate, perform checks as follows.
If dust or foreign substance is accumulated on the pickup lens, playback is disturbed and indication of TOC (content of tracks) may be disabled. Before adjusting check that the lens is clean. If the lens is contaminated, treat it as follows.

Turn off power supply, impregnate the lens cleaning paper with a small quantity of isopropyl alcohol, and gently wipe the lens with it with due care so that the lens is not damaged. At this time do not touch the lens directly with your finger.

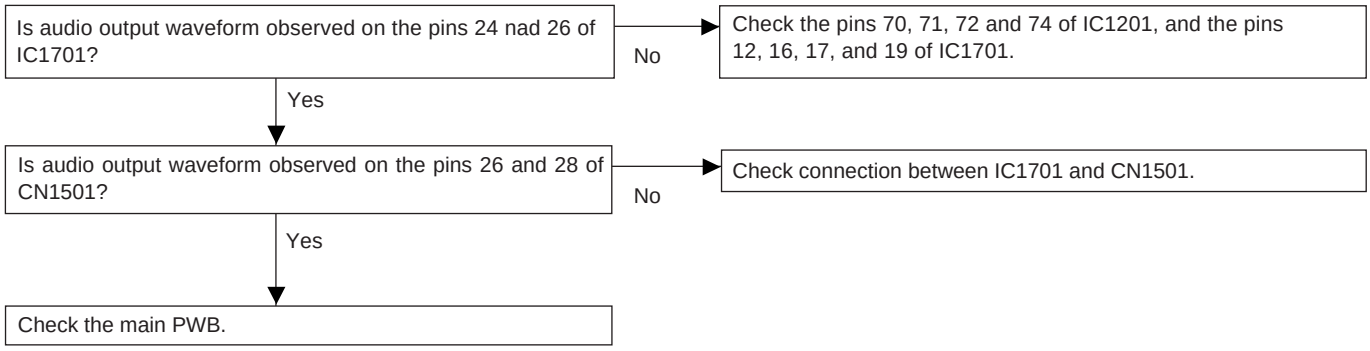

Is disc loading normal?
No
Check as stated in item "disc Loading is not normal".
Yes
Is playback state set when the MD PLAY/PAUSE button is pressed?
No
Check as stated in item "Playback state cannot be set".
Yes
Is audio output normal?
No
Check as stated in item "Audio playback circuit".
Yes
Is record and playback operations normal?
No
Check as stated in item "Record and playback operations".

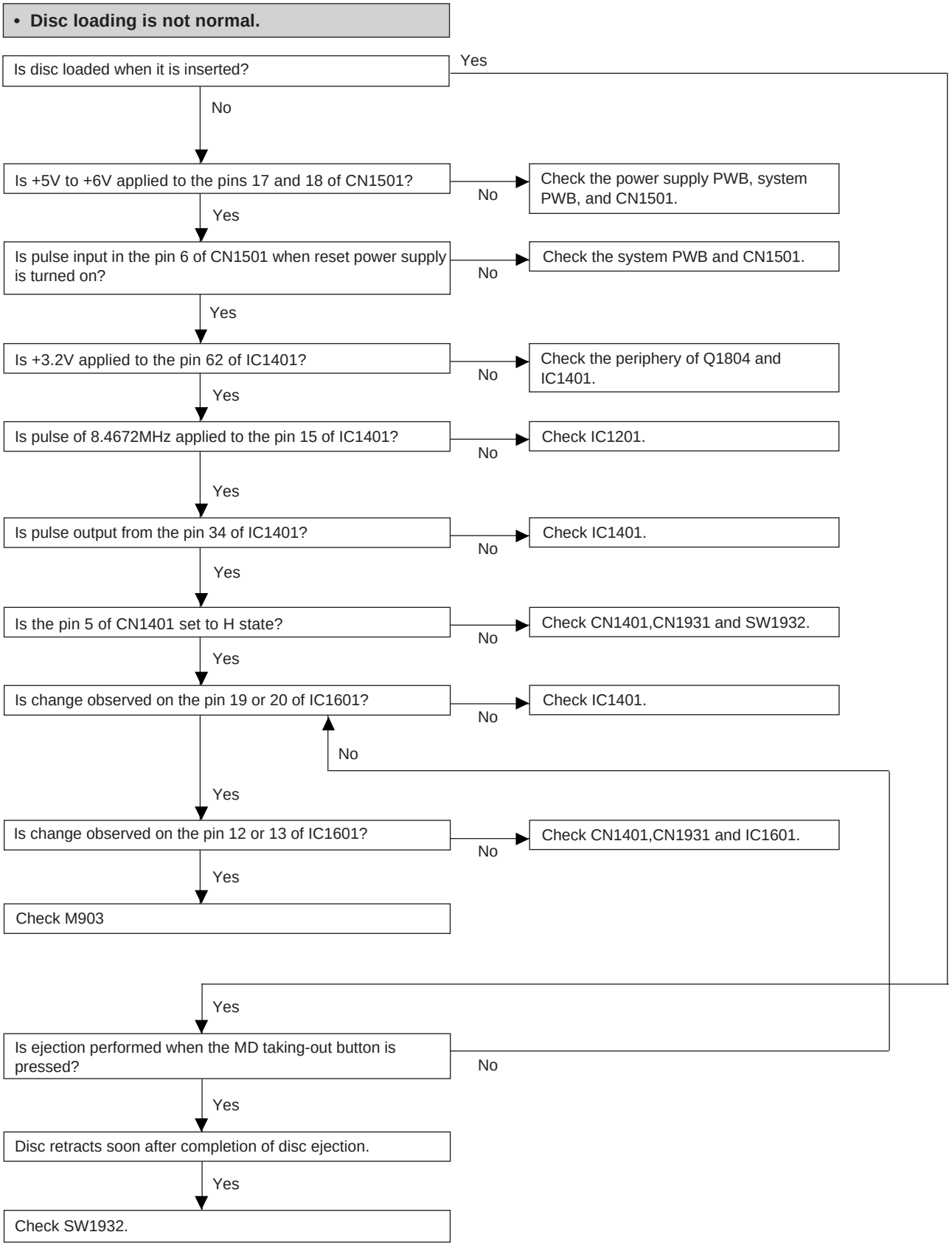
• Playback state cannot be set.


Is it impossible to set both high reflection disc and low reflection disc to playback state?
No
Check as stated in item "TEST mode check".
Yes
No
Only the high reflection disc cannot be played back.
Only the low reflection disc cannot be played back.
Yes
Yes
Is 1.3V to 1.6V applied to the pin 93 of IC1401 with the high reflection disc inserted?
Is 1.6V to 1.9V (record enabled) or 2.0V to 2.3V (record disabled) applied to the pin 93 of IC1401with the low reflection disc inserted?
Yes
No
Yes
No
After re adjustment check as stated in item "Normal playback".
Check SW1931loading PWB, and CN1931.

• Audio playback circuit

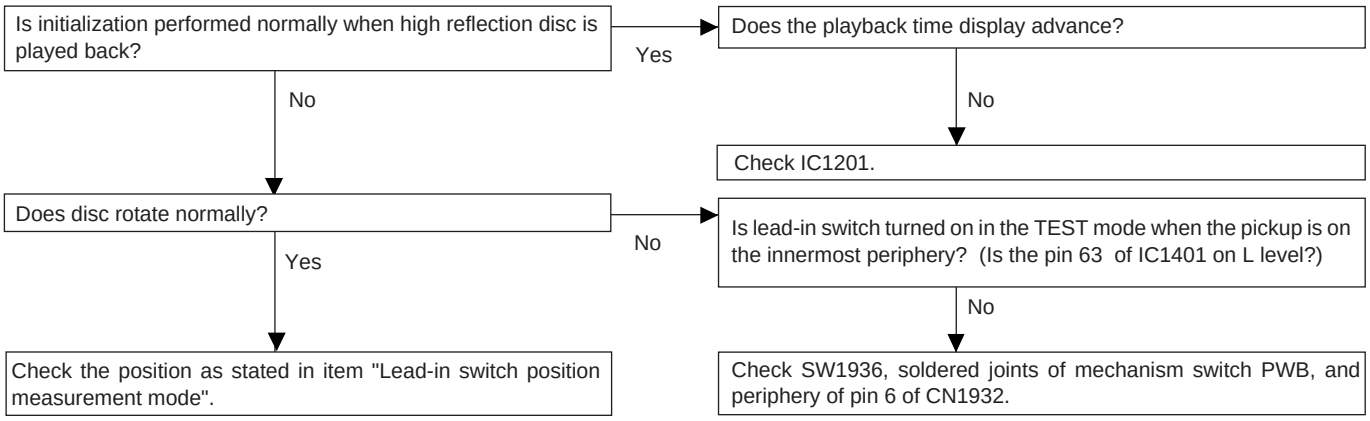
When sound is not output although the playback time display advances during playback in the normal mode.


Is audio output waveform observed on the pins 24 nad 26 of IC1701?
No
Check the pins 70, 71, 72 and 74 of IC1201, and the pins 12, 16, 17, and 19 of IC1701.
Yes
Is audio output waveform observed on the pins 26 and 28 of CN1501?
No
Check connection between IC1701 and CN1501.
Yes
Check the main PWB.


• Disc loading is not normal.
Is disc loaded when it is inserted?
Yes
No
Is +5V to +6V applied to the pins 17 and 18 of CN1501?
No
Check the power supply PWB, system PWB, and CN1501.
Yes
Is pulse input in the pin 6 of CN1501 when reset power supply is turned on?
No
Check the system PWB and CN1501.
Yes
Is +3.2V applied to the pin 62 of IC1401?
No
Check the periphery of Q1804 and IC1401.
Yes
Is pulse of 8.4672MHz applied to the pin 15 of IC1401?
No
Check IC1201.
Yes
Is pulse output from the pin 34 of IC1401?
No
Check IC1401.
Yes
Is the pin 5 of CN1401 set to H state?
No
Check CN1401,CN1931 and SW1932.
Yes
Is change observed on the pin 19 or 20 of IC1601?
No
Check IC1401.
No
Yes
Is change observed on the pin 12 or 13 of IC1601?
No
Check CN1401,CN1931 and IC1601.
Yes
Check M903
Yes
Is ejection performed when the MD taking-out button is pressed?
No
Yes
Disc retracts soon after completion of disc ejection.
Yes
Check SW1932.

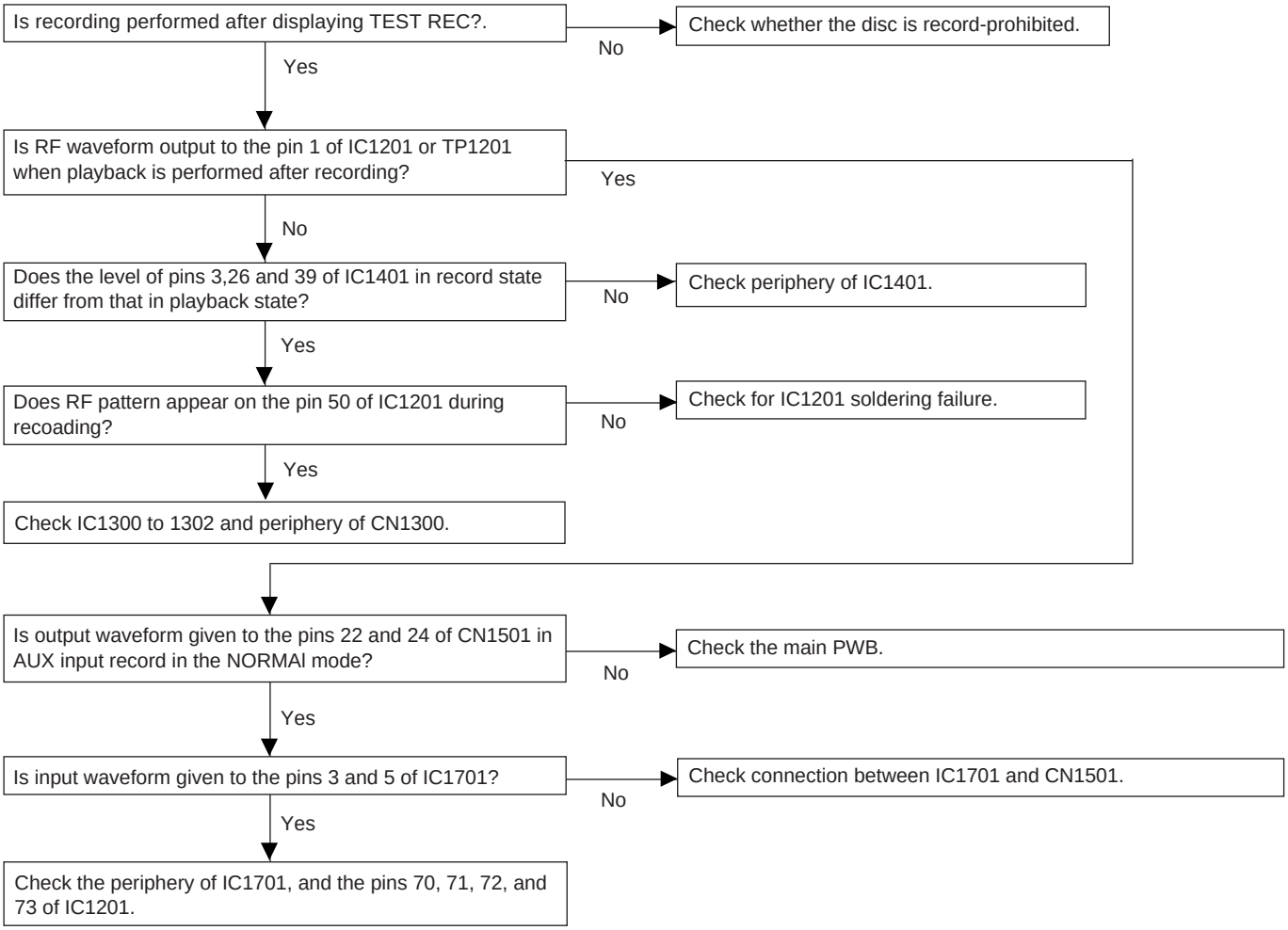
• Normal playback

When it has been confirmed that EEPROM value is normal in the TEST mode

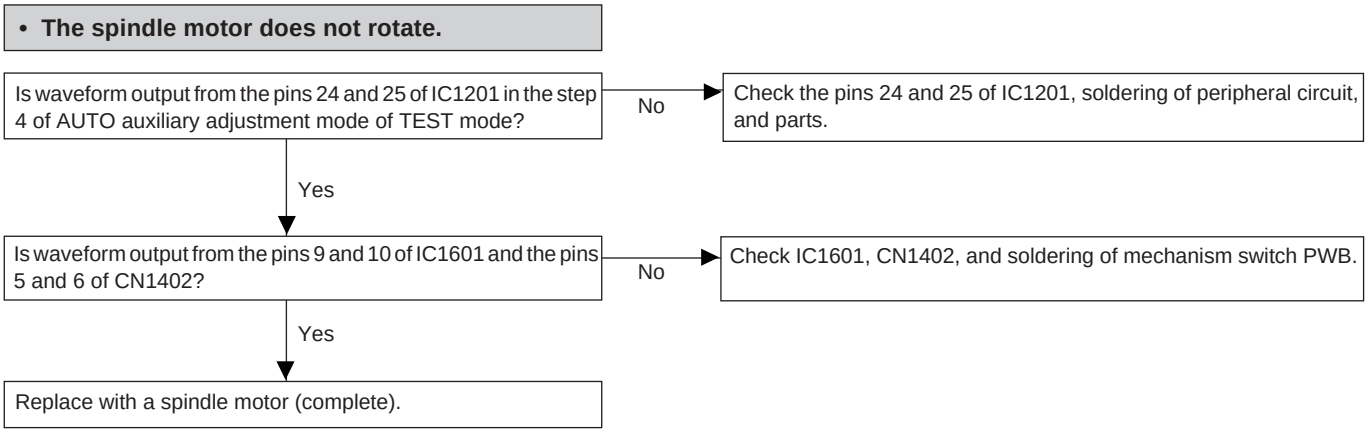

Is initialization performed normally when high reflection disc is played back?
Yes
Does the playback time display advance?
No
Check IC1201.
No
Does disc rotate normally?
No
Is lead-in switch turned on in the TEST mode when the pickup is on the innermost periphery? (Is the pin 63 of IC1401 on L level?)
Yes
No
Check the position as stated in item "Lead-in switch position measurement mode".
Check SW1936, soldered joints of mechanism switch PWB, and periphery of pin 6 of CN1932.

• Record and playback operations

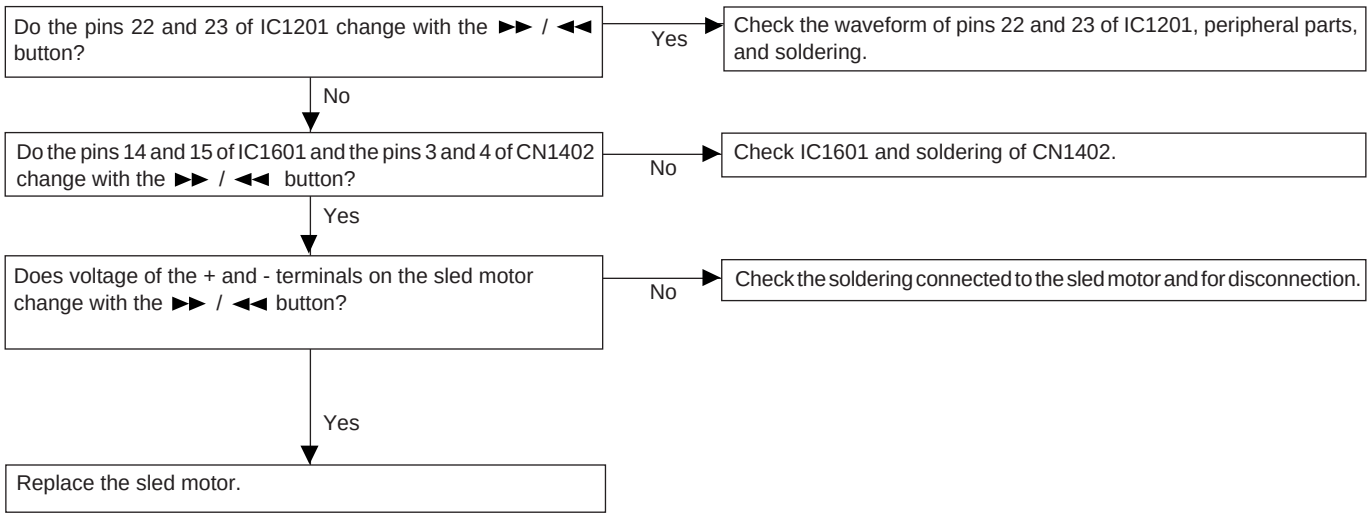
Insert the low reflection disc, and after verifying the audio output in the normal mode playback set the record/playback TEST mode.


Is recording performed after displaying TEST REC?.
No
Check whether the disc is record-prohibited.
Yes
Is RF waveform output to the pin 1 of IC1201 or TP1201 when playback is performed after recording?
Yes
No
Does the level of pins 3,26 and 39 of IC1401 in record state differ from that in playback state?
No
Check periphery of IC1401.
Yes
Does RF pattern appear on the pin 50 of IC1201 during recoading?
No
Check for IC1201 soldering failure.
Yes
Check IC1300 to 1302 and periphery of CN1300.
Is output waveform given to the pins 22 and 24 of CN1501 in AUX input record in the NORMAl mode?
No
Check the main PWB.
Yes
Is input waveform given to the pins 3 and 5 of IC1701?
No
Check connection between IC1701 and CN1501.
Yes
Check the periphery of IC1701, and the pins 70, 71, 72, and 73 of IC1201.

• The spindle motor does not rotate.


Is waveform output from the pins 24 and 25 of IC1201 in the step 4 of AUTO auxiliary adjustment mode of TEST mode?
No
Check the pins 24 and 25 of IC1201, soldering of peripheral circuit, and parts.
Yes
Is waveform output from the pins 9 and 10 of IC1601 and the pins 5 and 6 of CN1402?
No
Check IC1601, CN1402, and soldering of mechanism switch PWB.
Yes
Replace with a spindle motor (complete).

• The sled motor does not rotate.


Do the pins 22 and 23 of IC1201 change with the ►► / ◄◄ button?
Yes
Check the waveform of pins 22 and 23 of IC1201, peripheral parts, and soldering.
No
Do the pins 14 and 15 of IC1601 and the pins 3 and 4 of CN1402 change with the ►► / ◄◄ button?
No
Check IC1601 and soldering of CN1402.
Yes
Does voltage of the + and - terminals on the sled motor change with the ►► / ◄◄ button?
No
Check the soldering connected to the sled motor and for disconnection.
Yes
Replace the sled motor.

FUNCTION TABLE OF IC

IC1 VHiLA9235M/-1:Servo Amp. (LA9235M)

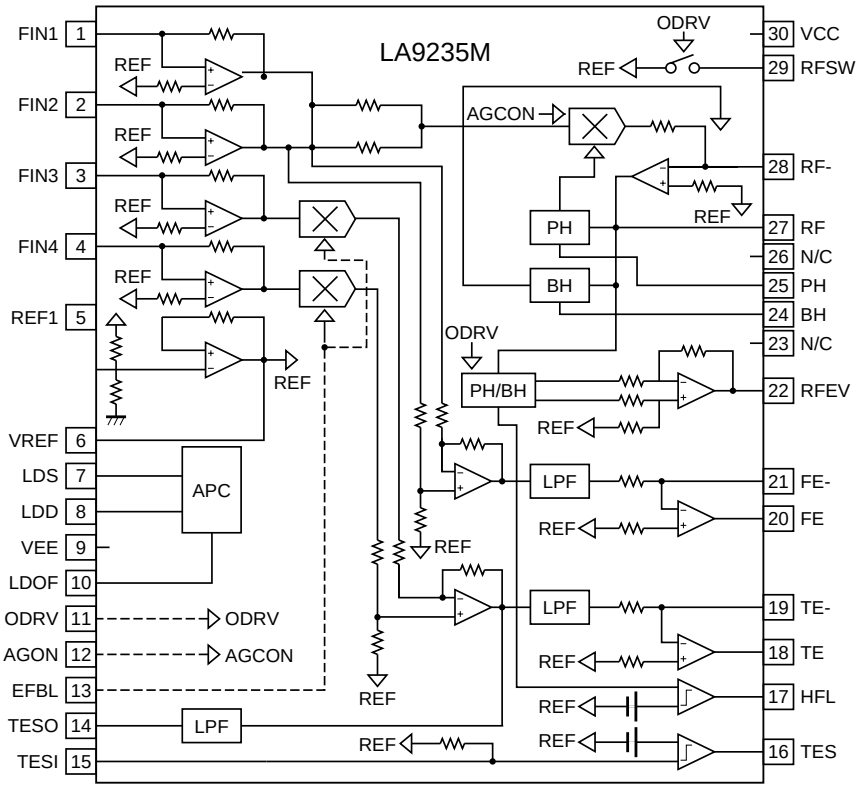


Figure 76-1 BLOCK DIAGRAM OF IC

IC2 VHiLC78641E-1:Servo/Signal Control (LC78641E) (1/3)

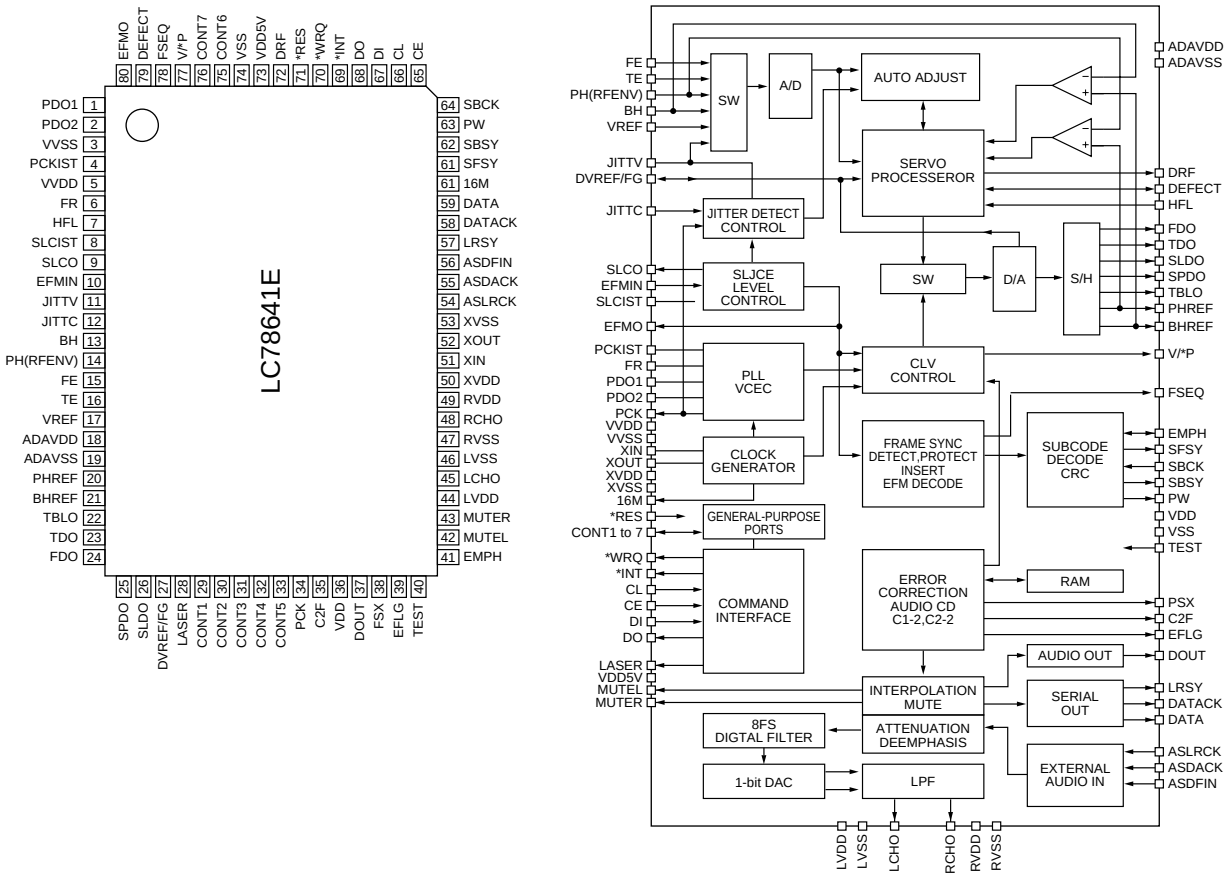


Figure 76-2 BLOCK DIAGRAM OF IC

IC2 VHiLC78641E-1:Servo/Signal Control (LC78641E) (2/3)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function		
1	PDO1	Output	–	For PULL	Phase-comparison output terminal for built-in VOC control.	
2	PDO2	Output	–		Phase-comparison output terminal for built-in VOC control. Rough servo : OFF, phase servo : ON.	
3	VVSS	–	–		Ground terminal for built-in VCO.	
4	PCKIST	AI	–		Resistor terminal for setting the PDO output current.	
5	VVDD	–	–		Power terminal for built-in VCO.	
6	FR	AI	–		Resistor terminal for setting the VCO frequency range.	
7	HFL	Input	–	Mirror detection signal input terminal.		
8	SLCIST	AI	–	For slice level control	Resistance connection terminal for current adjustment of SLCO output.	
9	SLCO	Output	–		Control output.	
10	EFMIN	Input	–		EFM signal input terminal.	
11*	JITTV	Output	Unfixed	Jitter detection/monitor terminal.		
12	JITTC	Output	–	Jitter detection/adjustment terminal.		
13	BH	Input	–	BH signal input terminal. A/D input.		
14	PH(RFENV)	Input	–	PH signal or RFENV signal input terminal. A/D input.		
15	FE	Input	–	FE signal input terminal. A/D input.		
16	TE	Input	–	TE signal input terminal. A/D input.		
17	VREF	Input	–	VREF signal input terminal. A/D input.		
18	ADAVDD	–	–	AD for servo, D/A power terminal.		
19	ADAVSS	–	–	AD for servo, D/A ground terminal.		
20*	PHREF	Output	(1/2VDD)	PH reference output terminal. D/A output.		
21*	BHREF	Output	(1/2VDD)	BH reference output terminal. D/A output.		
22	TBLO	Output	(1/2VDD)	Output terminal for tracking balance. D/A output.		
23	TDO	Output	(1/2VDD)	Output terminal for tracking control. D/A output.		
24	FDO	Output	(1/2VDD)	Output terminal for focus control. D/A output.		
25	SPDO	Output	(1/2VDD)	Output terminal for spindle control. D/A output.		
26	SLDO	Output	(1/2VDD)	Output terminal for sled control. D/A output.		
27*	FG	Input	–	FG signal input terminal. (When not used,connect to 0V)		
28	LASER	Output	L	LASER ON/OFF control terminal.		
29	CONT1	In/Output	Input mode	General purpose input/output terminal 1.	Controlled with serial data command from microcomputer. When not used, set it as the input terminal and open it by connecting to 0V, or set it as the output terminal and open it.	
30	CONT2	In/Output	Input mode	General purpose input/output terminal 2.		
31*	CONT3	In/Output	Input mode	General purpose input/output terminal 3.		
32	CONT4	In/Output	Input mode	General purpose input/output terminal 4.		
33	CONT5	In/Output	Input mode	General purpose input/output terminal 5.		
34*	PCK	Output	H	Clock monitor terminal for EFM data replay. 4.3218MHz as phase clock.		
35*	C2F	Output	H	C2 flag output terminal.		
36	VDD	–	–	Power terminal of digital system.		
37	DOUT	Output	L	Output terminal of digital OUT. (EIAJ format)		
38*	FSX	Output	L	Output terminal of synchronous signal of 7.35kHz divided from quartz oscillation.		
39*	EFLG	Output	L	C1,C2 correct monitor terminal.		
40	TEST	Input	–	Input terminal for test. Surely connected to 0V.		
41*	EMPH	In/Output	Input mode	Emphasis terminal. After resetting, it is configured as an input terminal. It can be controlled from the outside. It is also becomes a emphasis monitor terminal under command control.		
42*	MUTEL	Output	H	Mute output terminal for L channel.		
43*	MUTER	Output	H	Mute output terminal for R channel.		

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC2 VHiLC78641E-1:Servo/Signal Control (LC78641E) (3/3)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function	
44	LVDD	–	–	L channel	Power terminal for L channel.
45	LCHO	Output	1/2VDD	D/A converter	L channel output terminal.
46	LVSS	–	–		Ground terminal for L channel. Surely connected to 0V.
47	RVSS	–	–	R channel	Ground terminal for R channel. Surely connected to 0V.
48	RCHO	OUTPUT	1/2VDD	D/A converter	R channel output terminal.
49	RVDD	–	–		Power terminal for R channel.
50	XVDD	–	–	For quartz	Power terminal for quartz oscillation.
51	XIN	Input	Oscillation	oscillation	Ground terminal of 16.9344MHz quartz oscillation.
52	XOUT	Output	Oscillation		
53	XVSS	–	–		Ground terminal for quartz oscillation. Surely connected to 0V.
54	ASLRCK	Input	–	For anti	L/R clock input terminal. (When not used,connect to 0V)
55	ASDACK	Input	–	shock mode	Bit clock input terminal. (When not used,connect to 0V)
56	ASDFIN	Input	–		L/R channel data input terminal. (When not used,connect to 0V)
57	LRSY	Output	L	For digital	L/R clock output terminal.
58	DATACK	Output	L	data output	Bit clock output terminal.
59	DATA	Output	L		L/R channel data output terminal.
60*	16M	Output	Clock output	16.9344MHz output terminal.	
61*	SFSY	Output	L	Output terminal of synchronous signal of subcode frame. It drops when subcode stand by.	
62*	SBSY	Output	L	Output terminal of synchronous signal of subcode block.	
63*	PW	Output	L	Output terminal of subcodes P,A,R,S,T,U and W.	
64	SBCK	Input	–	Clock input terminal to read subcode. (When not used,connect to 0V)	
65	CE	Input	–	For	Chip enable signal input terminal.
66	CL	Input	–	microcomputer	Data transmission clock input terminal.
67	DI	Input	–	interface	Data input terminal.
68	DO	Output	L		Data output terminal.
69	INT	Output	H		Interruption signal output terminal.
70	WRQ	Output	H		Interruption signal output terminal.
71	RES	Input	–	Reset input terminal of LC78640. When turning on power, set it at "L".	
72	DRF	Output	L	Focus ON detection terminal.	
73	VDD5V	–	–	Power terminal for microcomputer interface.	
74	VSS	–	–	Ground terminal of digital system. Surely connected to 0V.	
75	CONT6	In/Output	Input mode	General purpose input/output terminal 6.	Controlled with serial data command from microcomputer. When not used, set it as the input terminal and open it by connecting to 0V, or set it as the output terminal and open it.
76	CONT7	In/Output	Input mode	General purpose input/output terminal 7.	
77*	V/ *P	Output	H	Monitor output terminal for automatic switch of rough servo/phase control. "H" for rough servo, and "L" for phase servo.	
78*	FSEQ	Output	L	Output terminal synchronous signal detection. "H" is output when synchronous signal detected by EFM signal matches synchronous signal internally generated.	
79*	DEFECT	In/Output	Input mode	Defect terminal. After resetting, it is configured as an input terminal. It can be controlled from the outside. It also becomes a defect monitor terminal under command control	
80*	EFMO	Output	Unfixed	EFM signal output terminal.	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Be sure to supply the same potential to each power terminal. (VVDD,ADAVDD,VDD,LVDD,RVDD,XVDD)
Terminal witch is controlled by the power terminal (VDD5V) for a microcomputer interface :
CE (65pin), CL (66pin), DI (67pin), DO (68pin), INT (69pin), WRQ (70pin), RES (71pin), DRF (72pin),
CONT6 (75pin), CONT7 (76pin)

IC3 VHiLA6558++-1: Focus/Tracking/Spin/Sled/Roading/Move Driver (LA6558)

Pin No.	Terminal Name	Function
1	VO3-	CH3(-)output
2	VO3+	CH3(+)output
3	VO5-	CH5(-)output Inversion when input
4	VO5+	CH5(+)output No inversion when input
5	VO4-	CH4(-)outputÅ Inversion when input
6	VO4+	CH4(+)output No inversion when input
7	P-GND	Power system GND(CH3,4,5)
8	S-GND	Signal system GND
9	VREF	Reference voltage input
10	IN-MUTE	Sending BTL AMP (CH 1, 2, 4, 5) and 3.3 V, 5 V REG, "H": ON, "L": OFF
11	0-RESET	Reset output (open collector)
12	VIN4	CH4input
13	VIN5	CH5input
14	VIN3+	CH3input+
15	VIN3-	CH3input-
16*	5VREG	5V power output
17	VIN6-	CH6input-
18	VIN6+	CH6input+
19	VIN2	CH2input
20	VIN1	CH1input
21	S-VCC	Signal system VCC
22	3.3VREG	3.3 V power output
23	P-VCC	Power system power supply
24	P-GND2	Power system GND(CH1,2,6)
25	V01-	CH1(-)output Inversion when input
26	V01+	CH1(+)output No inversion when input
27	V02-	CH2(-)output Inversion when input
28	V02+	CH2(+)output No inversion when input
29	V06-	CH6(-)output
30	V06+	CH6(+)output

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.
Set the ground (minimum potential) at the center frame.

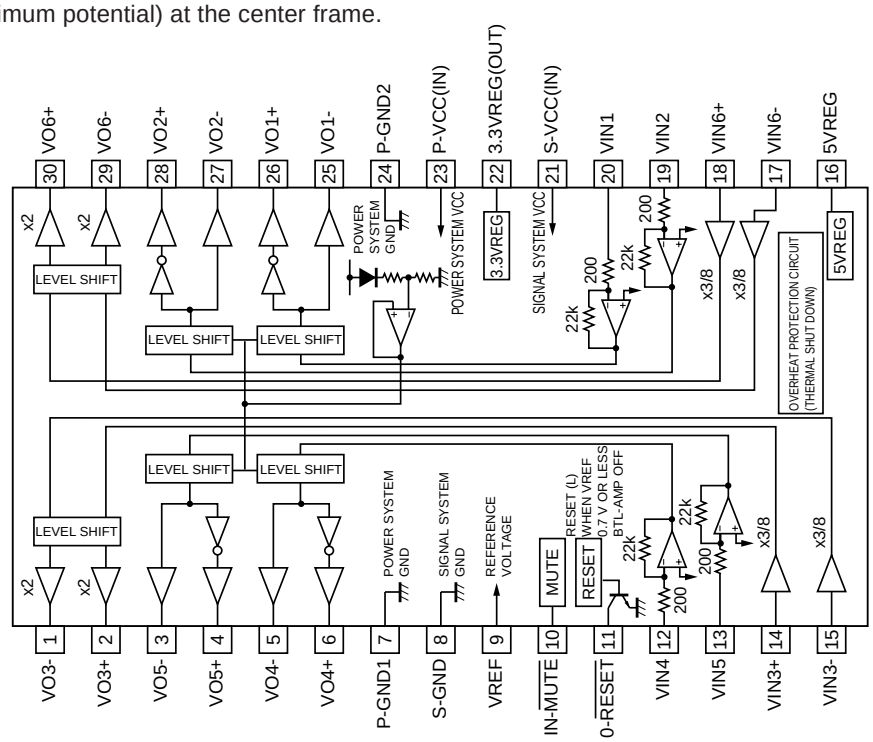


Figure 79 BLOCK DIAGRAM OF IC

ICD01 RHiX0321AWZZ: System Microcomputer/FL Driver (iX0321AW) (1/2)

Pin No.	Terminal Name	Port Name	Setting in Reset	Input/Output	Function
1	CD-DRF	P16	–	Output	CD Control
2	CD-WRQ	P17	–	Output	CD Control
3	MD-STB	P30	–	Output	MD Control
4	MD LOAD-SW	P31	–	Input	For MD control (DATA when rewriting FLASH)
5	C2-CE	P32	–	Output	VOL/TUNER Control
6	C2-SL	P33	–	Output	VOL/TUNER Control
7	C2-SI	P34	–	Output	VOL/TUNER Control
8	C2-SO	P35	–	Input	VOL/TUNER Control
9	SURROUND	P36	–	Output	"L": Surround ON (CLOCK when rewriting FLASH)
10	PROGLAM/DAT	P37	–	Input	"H": Program rewriting mode
11	–	RES	–	–	
12	CD PU-IN	AN10	–	Input	Pick position detection. "L" : INNER RADIUS.
13	FAN-H/L	AN11	–	Input	High-speed when FAN-MOTOR speed detection is "L"
14	–	Vss1	–	Input	
15	–	CF1	–	–	3.38MHz
16	–	CF2	–	–	
17	–	Vdd1	–	–	
18	FAN-MOTOR	AN0	–	Output	"H": FAN-MOTOR ON
19	MOTOR LOCK	AN1	–	Input	MOTOR current detection input
20	TUNER-SM	AN2	–	Input	TUNER signal level detection
21	DSET	AN3	–	Input	Destination setting port
22	SP-PRTECT	AN4	–	Input	Protection mode when 3.5 V or less
23	MULTI-JOG	AN5	Stand-by	Input	
24	KEY-1	AN6	Stand-by	Input	Operation key
25	KEY-3	AN7	Stand-by	Input	Operation key
26	VOL-JOG	AN8	–	Input	
27	KEY-2	AN9	Stand-by	Input	Operation key
28	SYS-STOP	INT2	–	Input	Back-up mode when power failure detection is "L"
29	REMOTE	INT3	Stand-by	Input	Remote Contorol Input
30	G1	T0	OFF	Output	Grid drive output 1G-14G
31	G2	T1	OFF	Output	
32	G3	T2	OFF	Output	
33	G4	T3	OFF	Output	
34	G5	T4	OFF	Output	
35	G6	T5	OFF	Output	
36	G7	T6	OFF	Output	
37	G8	T7	OFF	Output	
38	G9	T8	OFF	Output	
39	G10	T9	OFF	Output	
40	G11	T10	OFF	Output	
41	G12	T11	OFF	Output	
42	G13	T12	OFF	Output	
43	G14	T13	OFF	Output	
44	seg1	S14	OFF	Output	Segment drive
45	seg2	S15	OFF	Output	
46	–	Vdd3	–	–	
47	seg3	S16	OFF	Output	
48	seg4	S17	OFF	Output	
46	seg5	S18	OFF	Output	
50	seg6	S19	OFF	Output	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

ICD01 RHiX0321AWZZ: System Microcomputer/FL Driver (iX0321AW) (2/2)

Pin No.	Terminal Name	Port Name	Input/Output	Input/Output	Function
51	–	Vp	–	–	Segment drive
52	seg7	S20	OFF	Output	
53	seg8	S21	OFF	Output	
54	seg9	S22	OFF	Output	
55	seg10	S23	OFF	Output	
56	seg11	S24	OFF	Output	
57	seg12	S25	OFF	Output	
58	seg13	S26	OFF	Output	
59	seg14	S27	OFF	Output	
60	seg15	S28	OFF	Output	
61	seg16	S29	OFF	Output	
62	seg17	S30	OFF	Output	
63	seg18	S31	OFF	Output	
64	seg19	S32	OFF	Output	
65	seg20	S33	OFF	Output	
66	seg21	S34	OFF	Output	
67*	seg22	S35	OFF	Output	
68*	seg23	S36	OFF	Output	
69*	seg24	S37	OFF	Output	
70*	seg25	S38	OFF	Output	
71*	seg26	S39	OFF	Output	
72	–	Vdd4	–	–	
73*	seg27	S40	OFF	Output	
74*	seg28	S41	OFF	Output	
75*	seg29	S42	OFF	Output	
76*	seg30	S43	OFF	Output	
77*	seg31	S44	OFF	Output	
78*	seg32	S45	OFF	Output	
79*	seg33	S46	OFF	Output	
80*	seg34	S47	OFF	Output	
81*	seg35	S48	OFF	Output	
82	POWER	PG1	–	Output	Power for set switch output "H" : ON.
83	VOL-LED	PG2	–	Output	Flashing when VOL operation
84	TIMER-LED	PG3	–	Output	Timer stand by LED output. "H" : ON.
85	SYS-MUT	P00	–	Output	
86	MD-RES	P01	–	Output	MD Control
87	MD-ST	P02	–	Output	MD Control
88	MD-SERCH	P03	–	Output	MD Control
89	–	Vss2	–	–	
90	–	Vdd2	–	–	
91	VOL M-	P04	–	Output	"H": VOL knob in
92	VOL M+	P05	–	Input	"H": VOL knob out
93	CD-RES	P06	–	Input	CD Control
94	CD CE	P07	–	Input	CD Control
95	MD-KDATA	SO0	–	Output	MD Control
96	MD-DATA	S10	–	Input	MD Control
97	MD-DSCK	SCK0	–	Input	MD Control
98	CD-COIN	P13	–	Output	CD Control
99	CD-SQOUT	P14	–	Input	CD Control
100	CD-CQCK	P15	–	Output	CD Control

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

ICV01 VHiSTK40203-1: Power Amp. (STK40203)

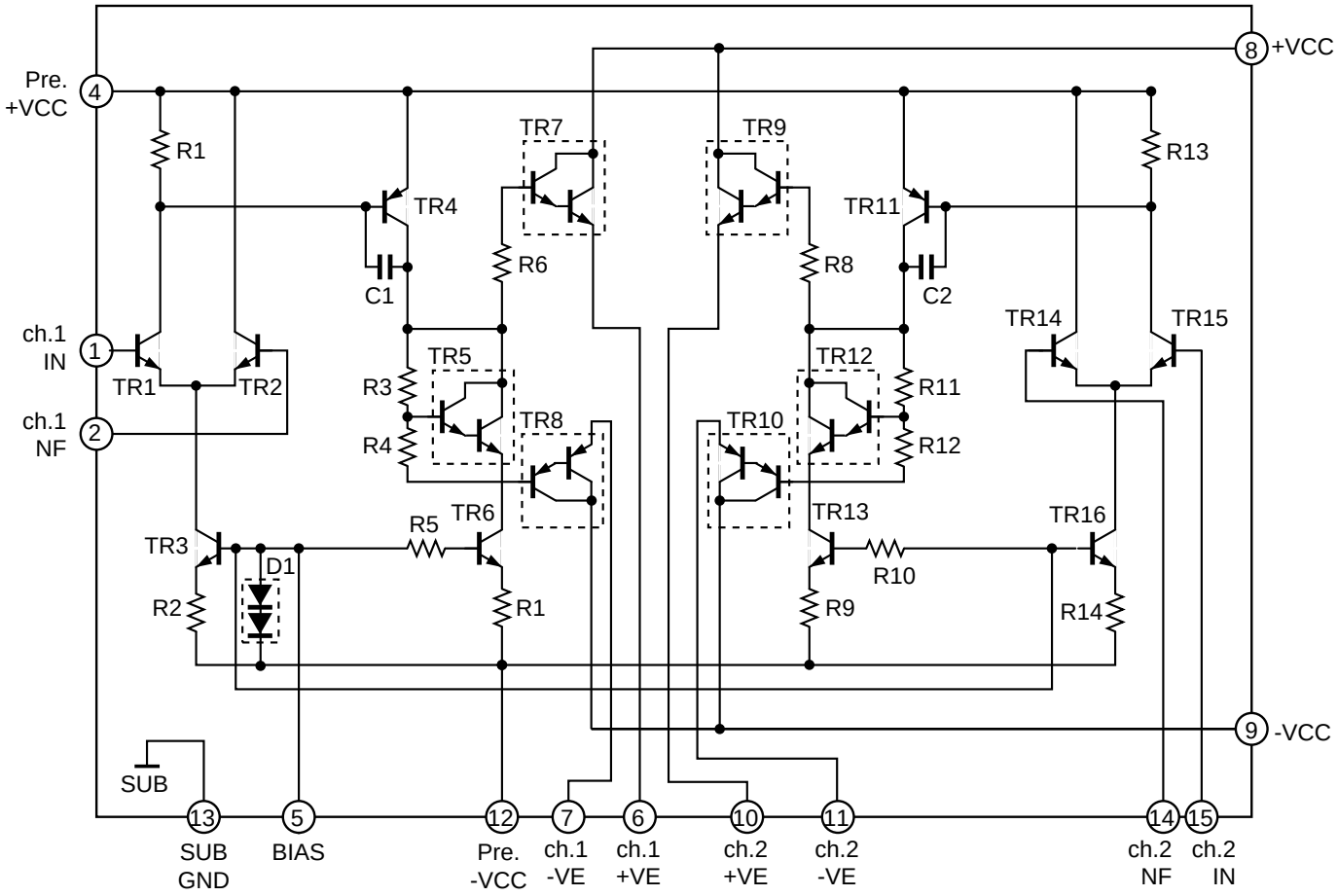


Figure 82-1 BLOCK DIAGRAM OF IC

IC1101 VHiiR3R55//-1:RF Signal Processor (iR3R55)

Pin No.	Terminal Name	Function
1	RE2	RF signal input terminal 2 . The RF signal received is applied here.
2	RF1	RF signal input terminal 1 . The RF signal received is applied here.
3	RF4	RF signal input terminal 4 . The RF signal received is applied here.
4	RF3	RF signal input terminal 3 . The RF signal received is applied here.
5	REFI	Reference voltage amplifier input terminal
6	REFO	Reference voltage amplifier output terminal
7	RFADD	Resistance addition output terminal for RF1-4
8	TCGI	Groove: Track cross detection signal amplifier input terminal
9	AIN	Inverted signal input terminal for the servo signal amplifier (Focus servo system)
10	BIN	Inverted signal input terminal for the servo signal amplifier (Focus servo system)
11	EIN	Inverted signal input terminal for the servo signal amplifier (Tracking servo system)
12	FIN	Inverted signal input terminal for the servo signal amplifier (Tracking servo system)
13	BIAS	Bias input terminal
14	AVCC	Analog section power terminal
15*	STBY	Logic signal output terminal (The inverted STBY signal is output.)
16*	DISC	Logic signal output terminal (The inverted DISC signal is output.)
17*	SGAIN	Logic signal output terminal (The inverted SGAIN signal is output.)
18	AGND	Analog section Ground terminal
19	DGND	Digital section Ground terminal
20	DTEMP	Chip temperature detection terminal
21	LATCH	Latch signal input terminal
22	CLOCK	Clock signal input terminal
23	DATA	Serial data signal input terminal
24	DVCC	Digital section power terminal
25	FOUT	Output terminal for the servo signal amplifier (Tracking servo system)
26	EOUT	Output terminal for the servo signal amplifier (Tracking servo system)
27	BOUT	Output terminal for the servo signal amplifier (Focus servo system)
28	AOUT	Output terminal for the servo signal amplifier (Focus servo system)
29	TCGO	Groove: Track cross detection signal amplifier output terminal
30	WBO	ADIP signal binary-comparison output terminal
31	22KI	ADIP signal binary-comparison input terminal
32	22KO	ADIP signal HPF amplifier output terminal
33*	ADLPFO	ADIP signal LPF amplifier output terminal
34*	NC	Not used
35	ADIPO	ADIP signal preamplifier outout terminal
36	ADIPI	ADIP signal AGC amplifier outout terminal
37	ADAGC	ADIP signal AGC smoothing capacitor terminal
38	ADAGI	ADIP signal AGC amplifier input terminal
39	RF2-1	RF1 and RF2 differential signal
40	EFMO	RF signal preamplifier output terminal
41*	EFMI	RF signal AGC amplifier output terminal
42	AVCC	Analog section power terminal
43	AGND	Analog section ground terminal
44	EFMAGC	EFM signal AGC smoothing capacitor terminal
45	EFMAGI	EFM signal AGC amplifier input terminal
46*	ATTR	Attenuated output terminal for the signal on pin 47 or pin 48
47	GOUT	Groove: The signal resulting from RF1+RF2-RF3-RF4 is output.
48	POUT	Pit: Resistance addition output for RF1-4

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1201 VHiLR376484F1: ENDEC/ATRAC (LR376484F) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1*	EFMMON	Output	EFM monitor output
2	AVCC	–	Analog power
3	EFMI	Input	EFM signal input from the RF amplifier
4	AGND	–	Analog ground
5	AIN	Input	Focus error signal A
6	EIN	Input	Tracking error signal E
7	TCG	Input	Track cross signal
8	BIN	Input	Focus error signal B
9	FIN	Input	Tracking error signal F
10	VBAT	Input	Supply voltage detection signal for the constant voltage servo
11	WBI	Input	ADIP wobble signal
12	VDD1	–	Digital power
13	DGND	–	Digital ground
14, 15	TEST0, TEST1	Input	Test input. Normally connected to GND.
16	TEST2	Input	Test input. Switches between the encoder and decoder/servo mode and the ATRAC mode. Normally connected to GND.
17	X176KO	Output	Clock output. f=176.4kHz (4fs)
18	FODRF	Output	Focus servo forward output, PWM.
19	FODRR	Output	Focus servo reverse output, PWM.
20	TRDRF	Output	Tracking servo forward output, PWM.
21	TRDRR	Output	Tracking servo reverse output, PWM.
22	SLDRF	Output	Slide servo forward output, PWM.
23	SLDRR	Output	Slide servo reverse output, PWM.
24	SPDRF	Output	Spindle servo forward output or spindle servo output, PWM.
25	SPDRR	Output	Spindle servo reverse output or spindle rotation forward/reverse selection
26	RAA3	Output	Address output to the external D-RAM, ADR3
27	RAA2	Output	Address output to the external D-RAM, ADR2
28	RAA1	Output	Address output to the external D-RAM, ADR1
29	RAA0	Output	Address output to the external D-RAM, ADR0 (LSB)
30*	RAA10	Output	Address output to the external D-RAM, ADR10 (MSB)
31	VDD2	–	Digital ground
32	RAA4	Output	Address output to the exterminal D-RAM, ADR4
33	RAA5	Output	Address output to the exterminal D-RAM, ADR5
34	RAA6	Output	Address output to the exterminal D-RAM, ADR6
35	RAA7	Output	Address output to the exterminal D-RAM, ADR7
36	RAA8	Output	Address output to the exterminal D-RAM, ADR8
37	RAOEX	Output	Data output enable signal output to the external D-RAM
38	DGND	–	Digital ground
39	RACASX	Output	Column address strobe signal output to the external D-RAM
40	RAD2	In/Output	Data input/output to and from external D-RAM, D2
41	RAD3	In/Output	Data input/output to and from external D-RAM, D3 (MSB)
42	RAA9	Output	Address output to the external D-RAM, ADR9
43	RARASX	Output	Low address strobe signal output to the external D-RAM
44	RAWEX	Output	Data write enable signal output to the external D-RAM
45	RAD1	In/Output	Data input/output to and from external D-RAM, D1
46	RAD0	In/Output	Data input/output to and from external D-RAM, D0 (LSB)
47*	TCRS	Output	Track cross signal
48*	ACRCER	Output	ADIP CRC error flag monitor output
49*	PLCK	Output	Playback: EFM PLL clock output
50	EFM0	Output	Recording: EFM signal output. Playback: CIF (CI error frag) monitor output

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1201 VHiLR376484F1: ENDEC/ATRAC (LR376484F) (2/2)

Pin No.	Terminal Name	Input/Output	Function
51*	X700KO	Output	Clock output. f=705.6kHz. When RSTX=0, the clock output is not available.
52*	EXPORT0	Output	Microcomputer extension output port 0
53*	EXPORT1	Output	Microcomputer extension output port 1
54*	TESO1	Output	PLLR switching: Microcomputer extension output port 2.
55	TEST3	In/Output	PLLOSC switching: Microcomputer extension output port 3.
56	TEST4	In/Output	EXTCLK switching: Microcomputer extension output port 4.
57	CDDATA	In/Output	High-speed dubbing CD data input. Switching: Microcomputer extension output port 5.
58	CDLRCK	In/Output	High-speed dubbing CD LR clock input. Switching: Microcomputer extension output port 6.
59	CDBCLK	In/Output	High-speed dubbing CD bit clock input. Switching: Microcomputer extension output port 7.
60	VXI	Input	Variable pitch PLL clock input
61*	VPD	Output	Variable pitch PLL phase error output
62	VDD1	–	Digital power
63	DGND	–	Digital ground
64	XI	Input	Oscillation circuit input. 33.8688MHz
65	XO	Output	Oscillation circuit input. 33.8688MHz
66	DIN	Input	Digital input signal
67	DOUT	Output	Digital output signal
68	VDD3	Input	External capacitor terminal
69	DGND	–	Digital ground
70	LRCK	Output	L- and R-channel switching output for music data
71	BCLK	Output	Music data shift clock
72	DFCK	Output	Clock for AD/DA converter digital filter. 256Fs
73	ADDATA	Input	Audio data input
74	DADATA	Output	Audio data output
75*	FEMON	Output	Focus error signal monitor output
76*	TOTMON	Output	Total signal monitor output
77*	TEMON	Output	Tracking error signal monitor output
78	SBCK	Input	DIN subcode read clock. EIAJ CP-309 format
79	SBO	Output	DIN subcode serial data. EIAJ CP-309 format
80	SBSY	Output	DIN subcode synchronous block signal. EIAJ CP-309 format
81	SFSY	Output	DIN subcode synchronous frame signal. EIAJ CP-309 format
82	FOK	Output	Focus detection signal status. "0": Focus OK
83	SENSE	Output	Servo state detection signal. "1" While pulling in for auto move, auto jump or auto focus
84	COUT	Output	Cross track signal output
85	MMCK	Output	Microcomputer clock output. When RSTX=0, clock output is also enabled.
86	DINTX	Output	Interruption request output terminal to system computer interface
87	VDD1	–	Digital power
88	DGND	–	Digital ground
89	RSTX	Input	Chip reset input. L: Reset. (Note)
90	SYD0	In/Output	System computer interface data bus terminal. (LSB)
91~96	SYD1~SYD6	In/Output	System computer interface data bus terminal.
97	SYD7	In/Output	System computer interface data bus terminal. (MSB)
98	SYWRX	Input	System computer interface register write input pulse
99	SYRDX	Input	System computer interface register read input pulse
100	SYRS	Input	System computer interface register select input

Note: When turning the power on, or after turning the power on, make RSTXL.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1401 RH-iX0326AWZZ:MD System Microcomputer (iX0326AW) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1	4M/16M	Output	4M/16M DRAM select input
2	64M	OUtput	64M DRAM select input
3	LDVAR	Output	LDVAR (Laser power output adjustment)
4*	ADIS	Output	ADJS (For automatic adjustment step check)
5	CIN	Input	CIN(track count signal input)
6*	NC	-	
7	UNLOCK	Input	ERR input (The monitor PLL won't lock.)
8	BYTE	Input	GND
9	CNVss	Input	GND
10*	STID OUT	Output	ST-ID output
11*	SEACH OUT	Output	MD search output
12	RESET	Input	RESET Input
13*	NC	-	Clock output
14	Vss	-	GND
15	MCCK	Input	EXTAL(8.4672MHz)
16	Vcc	-	+3.15V
17	P85	Input	Input/output port P85
18	DINT	Input	DINT (Interrupt input from the MD-LSI)
19	SFSY	Input	Interruption input
20	ST-ID	Input	ST-ID Input(MD-ON)
21	SERCH	Input	CD search input (Synchronized REC interrupt input)
22	MDRSW	Output	MD RSW output
23*	CDB SEL	Output	CD BLK SEL output
24	DSENSE	Input	DSENSE (Servo sense input from the MD-LSI)
25	P-DOWN	Input	P-DOWN (power failure detection)
26	HD ON	Output	HDON (Magnetic head current ON/OFF output)
27	EEPRO	Output	EEPROM protect release
28*	4.23	Output	4.23 MHz output
29	EEPK	Output	EEPROM serial clock output
30	EEPD	In/Output	EEPROM data input/output
31	MD DATA	Output	MD data output
32	K DATA	Input	K DATA (System computer data input)
33	DSCK	Input	DSCK (System computer communication clock input)
34	DSTB	Output	DSTB (System computer communication enable and during communication)
35	DATA	Output	R-DATA
36	SBO	Input	Sub-code serial data input
37	SBCK	Output	Sub-code communication serial clock output
38	$\overline{\text{LATCH}}$	Output	R-LATCH
39	R/P	OUtput	R/P output (REC/PLAY switching)
40	FOK	Input	FOK (Focus servo state monitor input)
41	FLASH L	Input	FLASH write selection
42	CLOCK	Output	R-CLK
43	SYRS	Output	SYRS (MD-LSI register select signal output)
44	SYRD	Output	SYRD (MD-LSI read signal output)
45	SYWR	Output	SYWR (MD-LSI write signal output)
46	FLASH H	Input	FLASH write selection
47	SYS D7	In/Output	SYS D7 (Data bus 7)
48	SYS D6	In/Output	SYS D6 (Data bus 6)
49	SYS D5	In/Output	SYS D5 (Data bus 5)
50	SYS D4	In/Output	SYS D4 (Data bus 4)
51	SYS D3	In/Output	SYS D3 (Data bus 3)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1401 RH-iX0326AWZZ:MD System Microcomputer (iX0326AW) (2/2)

Pin No.	Terminal Name	Input/Output	Function
52	SYS D2	In/Output	SYS D2 (Data bus 2)
53	SYS D1	In/Output	SYS D1 (Data bus 1)
54	SYS D0	In/Output	SYS D0 (Data bus 0)
55*	P37	Output	Input/output port P37
56*	P36	Output	Input/output port P36
57*	P35	Output	Input/output port P35
58*	P34	Output	Input/output port P34
59*	P33	Output	Input/output port P33
60*	P32	Output	Input/output port P32
61	P31	Output	Input/output port P31
62	Vcc	Input	+3.15V
63	INNSW	Input	Pick innermost periphery detection input
64	GND	-	GND
65	L3 DATA	Output	L3 DATA (software serial communication, with 2 modes available, LSB first)
66	L3 MODE	Output	L3 MODE (software serial communication, with 2 modes available, LSB first)
67	L3 CLK	Output	L3 CLK (software serial communication, with 2 modes available, LSB first)
68*	P24	Output	Input/output port P24
69*	P23	Output	Input/output port P23
70	PCNT0	Output	PCNT0 output
71*	PCNT1	Output	Input/output port
72	LD ON	Output	LDON output(H:ON)
73	A/B	Output	ANLPTR output
74	SBSY	Output	ADPON output (for CK)
75*	DAP ON	Output	DAPON output (for CK)
76*	DFS0	Output	DFS0 output
77*	DFS1	Output	DFS1 output
78	P12	Output	Input/output port P12
79	P11	Output	Input/output port P11
80	XRST	Output	XRST (System reset output)
81*	AD MUTE	Output	ADMUTE output (for CK)
82	LD+	Output	LD+ (Loading motor + (positive) control output)
83	LD-	Output	LD- (Loading motor - (negative) control output)
84*	MUTE	Output	MUTE output
85*	DOUTM	Output	DOUTM output (for CK)
86*	TEST2	Input	TEST2 (Special mode selection 2)
87*	TEST1	Input	TEST1 (Special mode selection 1)
88*	TEST0	Input	TEST0 (Special mode selection 0)
89	AVCK3	Input	AVCK3(motor drive power monitor input)
90	AVCK2	Input	AVCK2 (AD/DA section 3.1V monitor input)
91	AVCK1	Input	AVCK1 (DOUT section 5V monitor input)
92	DTEMP	Input	DTEMP (Temperature detection input)
93	MINF	Input	MINF (Disc classification/REC input)
94*	TEST K1	Input	TEST K1(Test key input 1)
95*	TEST K2	Input	TEST K2(Test key input 2)
96	GND	-	GND
97*	NC	-	
98	VREF	-	+3.15V
99	AVcc	-	+3.15V
100	PR	Input	Playing/recording setting input

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1101 VHiiR3R55//-1:RF Signal Processor (iR3R55)

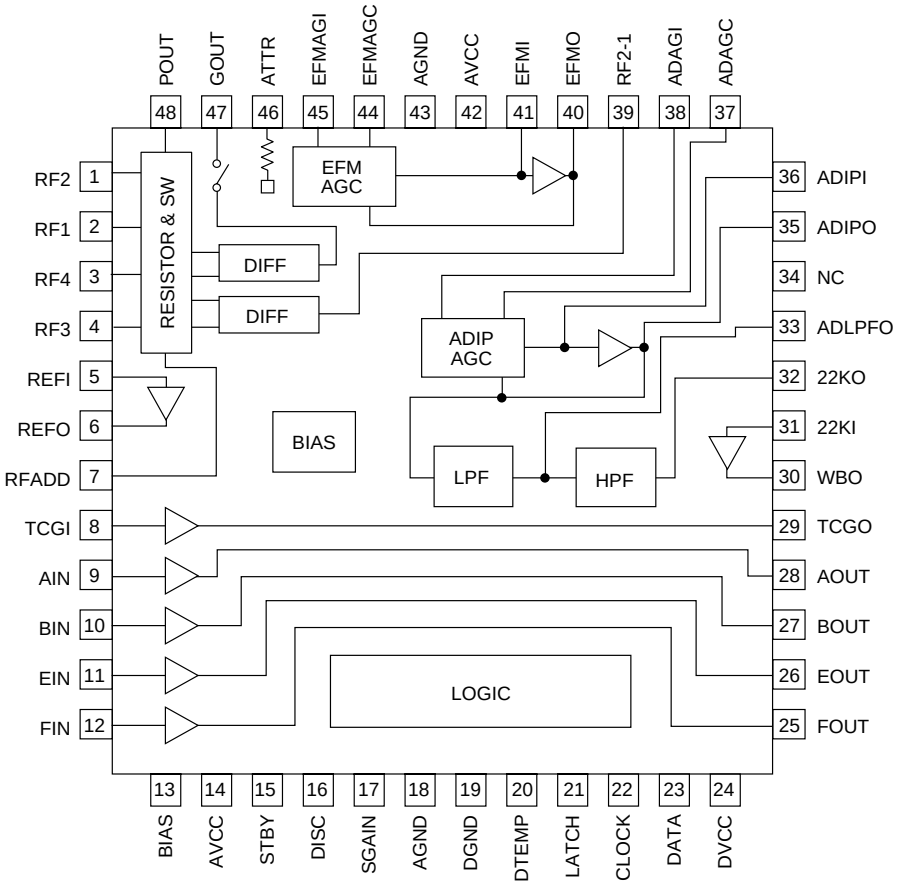


Figure 88-1 BLOCK DIAGRAM OF IC

IC1202 RH-iX2474AFZZ: 4Mbit D-RAM (iX2474AF)

Pin No.	Terminal Name	Function
1, 2	I/O1, I/O2	Data input/Data output
3	$\overline{WE}$	Write enable
4	$\overline{RAS}$	Row address storobe
5	A9	Address input
6-9	A0-A3	Address input
10	Vcc	Power (3.3V)
11-15	A4-A8	Address input
16	$\overline{OE}$	Output enable
17	$\overline{CAS}$	Column address storobe
18, 19	I/O3, I/O4	Data input/Data output
20	GND	Ground

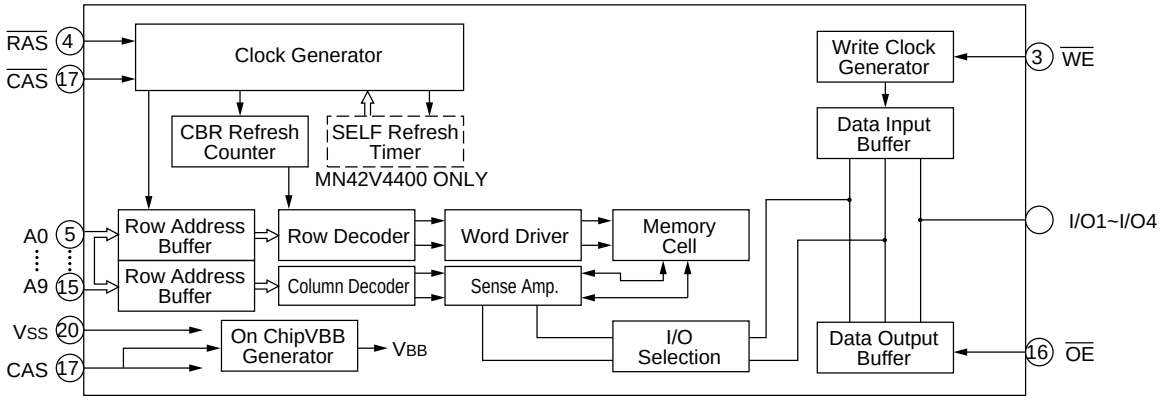


Figure 88-2 BLOCK DIAGRAM OF IC

IC1201 VHiLR376484F1:ENDEC/ATRAC (LR376484F)

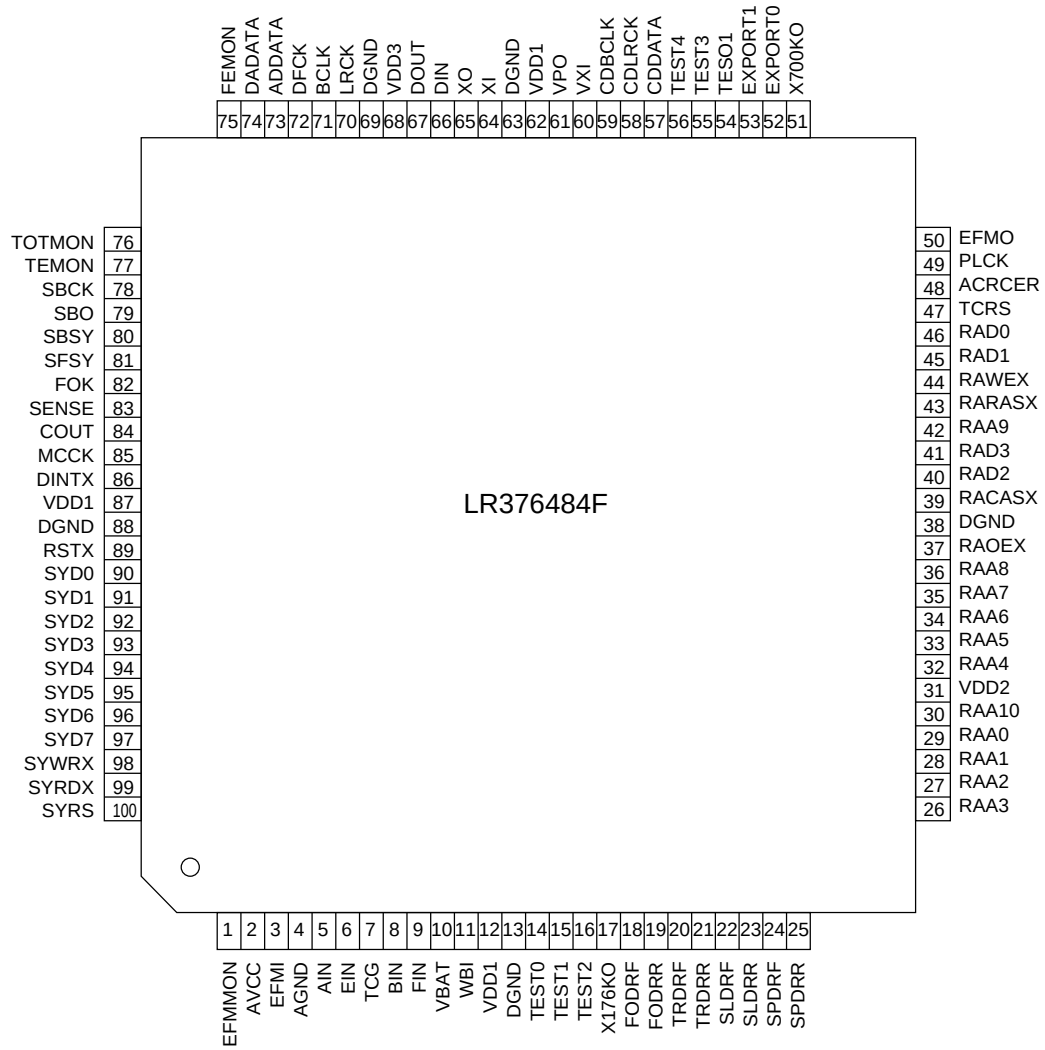


Figure 89-1 BLOCK DIAGRAM OF IC

FLD01 VVKBJ747GNK-1: FL Display

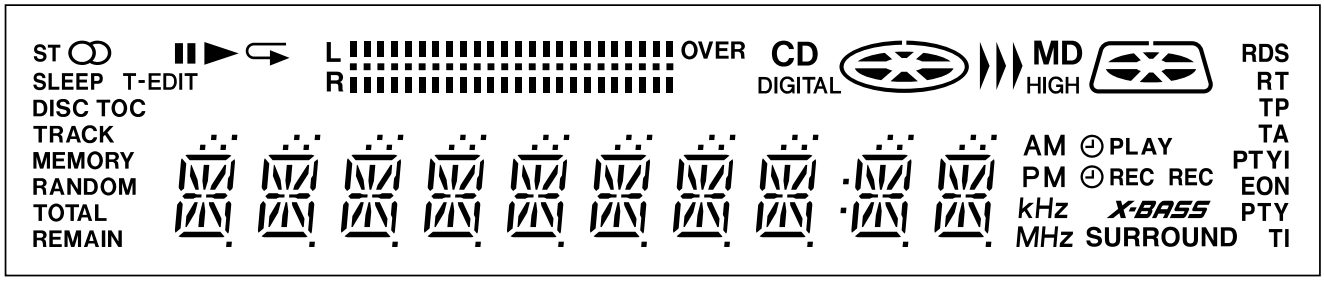


Figure 89-2

IC1701 VHiUDA1347T-1: AD/DA Converter (UDA1347T)

Pin No.	Terminal Name	Function
1	VSSA(ADC)	AD converter analog ground
2	VDDA(ADC)	AD converter analog power
3	VINL	AD converter input (left)
4	Vref(A)	AD converter reference voltage
5	VINR	AD converter input (right)
6	VADCN	AD converter reference voltage N
7	VADCP	AD converter reference voltage P
8*	MC1	Mode control 1 (Pulled-down)
9*	MP1	Multi-purpose pin 1
10	VDDD	Digital power
11	VSSD	Digital ground
12	SYSCLK	System clock 256fs, 384fs, 512fs
13	MP2	Multi-purpose pin 2
14	MP3	Multi-purpose pin 3
15	MP4	Multi-purpose pin 4
16	BCK	Bit clock input
17	WS	Word select input
18	DATAO	Data output
19	DATAI	Data input
20*	MP5	Multi-purpose pin 5 (Pulled-down)
21*	MC2	Mode control 2 (Pulled-down)
22	AVSS(DAC)	DA converter analog ground
23	AVDD(DAC)	DA converter analog power
24	VOUTR	DA converter output (right)
25	VDDO	Opeamp power
26	VOUTL	DA converter output (left)
27	VSSO	Opeamp ground
28	Vref(D)Input	AD converter reference voltage

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

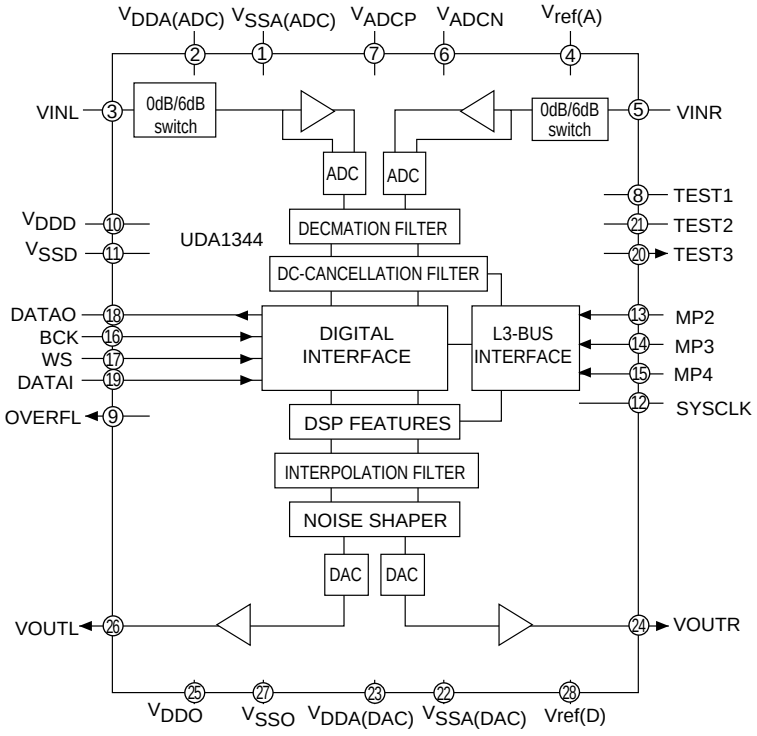


Figure 90 BLOCK DIAGRAM OF IC

SHARP PARTS GUIDE

MODEL MD-MX30

MD-MX30 MD Compact Component System consisting of MD-MX30(main unit) and CP-MX30(speaker system).

MODEL MD-MX30W

MD-MX30W MD Compact Component System consisting of MD-MX30W(main unit) and CP-MX30W(speaker system).

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

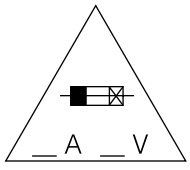
VCC ..... Ceramic type
VCK ..... Ceramic type
VCT ..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN ..... Cylindrical type (without lead wire)
VC • • TV ..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS ..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN ..... Cylindrical type (without lead wire)
VR • • TV ..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.



"CAUTION:FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE F801,F802 4A, 125V / F803 2.5A, 125V or 250V FUSES."

"ATTENTION:POUR ASSURER UNE LONGUE PROTECTION CONTRE UN INCENDIE, REMPLACER SEULEMENT PAR UN FUSIBLE DE TYPE F801,F802 4A, 125V / F803 2.5A, 125V ou 250V"

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
INTEGRATED CIRCUITS				
IC1	VHILA9235M/-1	J	AQ	Servo Amp.,LA9235M
IC2	VHILC78641E-1	J	AV	Servo Signal Control,LC78641E
IC3	VHILA6558++-1	J	AQ	Focus/Trucking/Spin/Sled/ Roading/Move Driver (LA6558)
IC302	VHILC72131/-1	J	AP	PLL (Tuner) LC72131
IC303	VHILA1832S/-1	J	AN	FM IF Det./FM Mpx./ AM IF, LA1832S
IC801	VHIAN78L05/-1	J	AE	Constant Voltage Regulator, AN78L05 [For MD-MX30]
IC801	VHIKIA7805AP1	J	AF	Constant Voltage Regulator, KIA7805AP [For MD-MX30W]
IC802	VHIKIA7812AP1	J	AF	Constant Voltage Regulator, KIA7812AP
IC803	VHIKIA7806AP1	J	AF	Constant Voltage Regulator, KIA7806AP
IC804	VHIKIA7805AP1	J	AF	Constant Voltage Regulator, KIA7805AP
IC1101	VHIIR3R55//-1	J	AQ	RF Signal Processor,IR3R55
IC1201	VHILR376484F1	J	AZ	ENDEC/ATRAC,LR376484F
IC1202	RH-IX2474AFZZ	J	BF	4Mbit D-RAM,IX2474AF
IC1300	VHI74ACT02T-1	J	AE	Head Driver,74ACT02T
IC1301	VHIFTD2005/-1	J	AG	Head Driver,FTD2005
IC1302	VHICPH5608/-1	J	AH	Head Driver,CPH5608
IC1401	RH-IX0326AWZZ	J	AZ	MD System Microcomputer, IX0326AW
IC1402	VHI58X2402T-1	J	AF	EEPROM,58X2402T
IC1601	VHIM56788FP-1	J	AX	Motor Driver,M56788FP
IC1701	VHIUDA1347T-1	J	AU	AD/DA Converter,UDA1347T
IC1702	VHINJM431U/-1	J	AE	Regulator,NJM431U
IC1801	VHIXC62EP32-1	J	AE	Regulator,XC62EP32
ICD01	RH-IX0321AWZZ	J	BA	System Microcomputer/FL Driver,IX0321AW
ICS01	VHIKIA4558P-1	J	AC	Ope Amp.,KIA4558P
ICU01	VHILC75341/-1	J	AM	Audio Processor,LC75341
ICU03	VHIPST9140/-1	J	AG	Reset,PST9140
ICV01	VHISTK40203-1	J	AX	Power Amp,STK40203
TRANSISTORS				
Q3	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q360	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR [For MD-MX30]
Q360	VS2SB562-C/-1	J	AD	Silicon,PNP,2SB562 C [For MD-MX30W]
Q371	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q801	VSKTA1023Y/-1	J	AE	Silicon,PNP,KTA1023 Y
Q900	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q901	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR [For MD-MX30W]
Q1402	VSUN2113///-1	J	AB	Digital,PNP,UN2113
Q1403	VSUN2213///-1	J	AB	Digital,NPN,UN2213
Q1501	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1700	VS2SD601AR/-1	J	AC	Silicon,NPN,2SD601 AR
Q1701	VSUN2213///-1	J	AB	Digital,NPN,UN2213
Q1702	VS2SA1162G/-1	J	AB	Silicon,PNP,2SA1162 G
Q1800	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1801	VS2SA1162G/-1	J	AB	Silicon,PNP,2SA1162 G
Q1802	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1803	VSUN221N///-1	J	AB	Digital,NPN,UN221 N
Q1804	VS2SA1242Y/-1	J	AE	Silicon,PNP,2SA1242 Y
Q1805	VS2SA1314C/-1	J	AD	Silicon,PNP,2SA1314 C
Q1806	VSUN221N///-1	J	AB	Digital,NPN,UN221 N
QD02	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
QDA1,2	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
QS01	VSKRA107M//-1	J	AE	Digital,PNP,KRA107 M
QS02	VS2SK246GR/-1	J	AB	FET,2SK246 GR
QU01,02	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QU03	VSKRA107M//-1	J	AE	Digital,PNP,KRA107 M
QU05	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QU06	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
QU07	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
QV01,02	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QV03	VSKTC3200GR-1	J	AC	Silicon,NPN,KTC3200 GR
QV04	VSKTA1268GR-1	J	AC	Silicon,PNP,KTA1268 GR
QV05	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
QV50,51	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QV52	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
QV53	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QV54	VSKTA1270Y/-1	J	AD	Silicon,PNP,KTA1270 Y [For MD-MX30:To Serial No.003xxxxx]
QV54	VS2SB562-C/-1	J	AD	Silicon,PNP,2SB562 C [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
QV55	VS2SB562-C/-1	J	AD	Silicon,PNP,2SB562 C [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
DIODES				
D21,22	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D301~306	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D352	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
⚠ D801	VHDTS4B03G+-1	J	AH	Silicon,TS4B03G
D802~805	VHD2A02M+++-X	J	AC	Silicon,2A02A
D806~808	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D809	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D810,811	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D812,813	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D815,816	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D818	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D822	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D900~903	VHD1N4004S/-1	J	AB	Silicon,1N4004S
D906	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D1300	VHDSBE803//-1	J	AD	Silicon,SBE803
D1401	VHDSB00703Q-1	J	AB	Silicon,SB00703Q
D1402	VHD1SS355//-1	J	AB	Silicon,1SS355
DD01,02	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DS01	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DU01~06	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DV01~08	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
LEDD01	VHP2647RT47-1	J	AD	LED,Red,2647RT47
LEDD02	VHPLNG901CF-1	J	AS	LED,Blue,LNG901CF
VD301	VHCSVC348S/-1	J	AK	Variable Capacitance,SVC348S
ZD60	VHEDZ5R1BSA-1	J	AB	Zener,5.1V,DZ5.1A
ZD351	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD801	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD802	VHEDZ330BSD-1	J	AC	Zener,33V,DZ330D
ZD803	VHEDZ130BSA-1	J	AC	Zener,13V,DZ130A
ZD804	VHEDZ6R2BSB-1	J	AC	Zener,6.2V,DZ6.2B
ZD805	VHEDZ5R1BSA-1	J	AB	Zener,5.1V,DZ5.1A
ZD900,901	VHEDZ160BSA-1	J	AD	Zener,16V,DZ160A [For MD-MX30W]
ZDV01	VHEMTZJ2R2B-1	J	AA	Zener,2.2V,MTZJ2.2B
ZDV02	VHEDZ3R6BSB-1	J	AB	Zener,DZ3.6B
FILTERS				
CF302	RFILF0124AFZZ	J	AD	FM IF
CF351	RFILF0003AWZZ	J	AK	FM IF
CF352	RFILA0009AWZZ	J	AE	AM IF
TRANSFORMERS				
T302	RCILA0062AWZZ	J	AC	Antenna
T306	RCILB0066AWZZ	J	AD	OSC
T351	RCILI0019AWZZ	J	AD	IF
⚠ T901	RTRNP0266AWZZ	J	AQ	Power (SUB)
⚠ T991	RTRNP0280AWZZ	J	BB	Power (MAIN) [For MD-MX30]
⚠ T991	RTRNP0281AWZZ	J		Power (MAIN) [For MD-MX30W]
COILS				
L61	VP-XHR82K0000	J	AC	0.82 µH
L62	VP-XH2R2K0000	J	AB	2.2 µH,Choke
L342	VP-DH2R2K0000	J	AB	2.2 mmH,Peaking
L351,352	VP-DH101K0000	J	AB	100 µH,Choke
L353	VP-DH102K0000	J	AB	1 mH,Choke
⚠ L900	RCILZ0021AWZZ	J	AF	AC Line Filter
L1100	VPBNNR47K0000	J	AC	0.47 µH
L1101	VPBNN100K0000	J	AC	10 µH
L1200	VPBNN4R7K0000	J	AC	4.7 µH
L1201	VPBNNR47K0000	J	AC	0.47 µH
L1300	RCILC0358AFZZ	J	AC	4.7 µH,Choke
L1501	RCILZ0016AWZZ	J	AD	1 µH
L1502	VPBNN4R7K0000	J	AC	4.7 µH
L1551,1552	VPBNNR47K0000	J	AC	0.47 µH
L1554	VPBNNR47K0000	J	AC	0.47 µH
L1600	RCILZ0016AWZZ	J	AD	1 µH
L1701,1702	VPBNN100K0000	J	AC	10 µH

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
LD01	VP-DH2R2K0000	J	AB	2.2 µH,Peaking
LD02	VP-XH2R2K0000	J	AB	2.2 µH,Choke
LV01,02	RCILZ0024AWZZ	J	AC	3 µH,Choke

CONTROL

VR351	RVR-M0026AWZZ	J	AC	10 kohm (B),Semi-VR

VIBRATORS

X351	92LCRSTL1425A	J	AF	Crystal,456 kHz
X352	RCRSP0002AWZZ	J	AH	Crystal,4.5 MHz
XL1	RCRSP0005AWZZ	J	AF	Crystal,16.934 MHz
XL1201	RCRSC0001AWZZ	J	AL	Crystal,33.8688 MHz
XLD01	RCRSP0009AWZZ	J	AK	Crystal,8.3886 MHz

CAPACITORS

C7	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C8	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C11	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C12	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C13	VCTYMN1CY103K	J	AA	0.01 µF,16V
C14	VCEAZA1HW334M	J	AB	0.33 µF,50V,Electrolytic
C16	VCCSBT1HL5R6K	J		5.6 pF,50V
C17	VCTYMN1CX472M	J	AA	0.0047 µF,16V
C18	VCCSPA1HL1R0C	J	AA	1 pF,50V
C20,21	VCFYHA1HA104J	J	AB	0.1 µF,50V,Thin Film
C22	VCKYMN1HB101K	J	AA	100 pF,50V
C23	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C24	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C25	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C26	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C27	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C28	VCEAZA0JW227M	J	AC	220 µF,6.3V,Electrolytic
C29,30	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C32	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C33,34	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C35	VCCCMN1HH8R2D	J	AA	8.2 pF (CH),50V
C36	VCCCMN1HH100J	J	AA	10 pF (CH),50V
C37	VCEAEA0JW476M	J	AB	47 µF,6.3V,Electrolytic
C41	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C42	VCCSMN1HL680J	J	AA	68 pF,50V
C44	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C45	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C46	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C49	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C50	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C51	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
C52	VCTYPA1CX103K	J	AA	0.01 µF,16V
C53	VCKYBT1HB102K	J	AA	0.001 µF,50V
C54	VCEAEA0JW476M	J	AB	47 µF,6.3V,Electrolytic
C55	VCTYMN1CY103K	J	AA	0.01 µF,16V
C64	VCEAEA1AW476M	J	AB	47 µF,10V,Electrolytic
C72	VCTYMN1CY103K	J	AA	0.01 µF,16V
C79	VCKYMN1HB102K	J	AA	0.001 µF,50V
C81,82	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C83	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C84	VCKYMN1HB102K	J	AA	0.001 µF,50V
C85	VCFYHA1HA564J	J	AD	0.56 µF,50V,Thin Film
C86	VCFYHA1HA334J	J	AC	0.33 µF,50V,Thin Film
C90	RC-EZ0004AWZZ	J	AD	3.3 µF,16V,Electrolytic
C91,92	VCEAZA1HW334M	J	AB	0.33 µF,50V,Electrolytic
C93,94	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C301	VCKYBT1HB102K	J	AA	0.001 µF,50V
C310,311	VCKYBT1HB101K	J	AA	100 pF,50V
C312	VCKYMN1HB101K	J	AA	100 pF,50V
C321	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C323	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C330	VCCUBT1HJ120J	J	AA	12 pF (UJ),50V [For MD-MX30]
C330	VCCUBT1HJ150J	J	AA	15 pF (UJ),50V [For MD-MX30W]
C331	VCKYPA1HF473Z	J	AB	0.047 µF,50V
C332	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C334	VCCUBT1HJ150J	J	AA	15 pF (UJ),50V [For MD-MX30]
C334	VCCUBT1HJ180J	J	AA	18 pF (UJ),50V [For MD-MX30W]
C335	VCKYMN1HB331K	J	AA	330 pF,50V
C337	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C338	VCKYBT1HB102K	J	AA	0.001 µF,50V
C339	VCKYMN1HB101K	J	AA	100 pF,50V
C341,342	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C343	VCCSMN1HL330J	J	AA	33 pF,50V
C345~347	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C350	VCKYPA1HF473Z	J	AB	0.047 µF,50V
C351	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C352	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C353,354	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C355	VCCSMN1HL220J	J	AA	22 pF,50V
C356	VCKYMN1HB102K	J	AA	0.001 µF,50V
C357	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C358	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C361	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C362	VCEAEA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C363	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C364	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C365	VCTYPA1CX223K	J	AA	0.022 µF,16V
C366	VCKYMN1HB102K	J	AA	0.001 µF,50V
C367,368	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C370~372	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C373,374	VCTYPA1CX273K	J	AA	0.027 µF,16V [For MD-MX30W]
C373,374	VCTYPA1CX333K	J	AA	0.033 µF,16V [For MD-MX30]
C376	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C377	VCTYPA1HF473Z	J		0.047 µF,50V
C380	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C381	VCCCMN1HH120J	J	AA	12 pF (CH),50V
C382	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C384	VCKYBT1HB102K	J	AA	0.001 µF,50V
C385	VCTYPA1CX103K	J	AA	0.01 µF,16V
C386	VCKYMN1HB331K	J	AA	330 pF,50V
C387	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C389	VCKYBT1HB102K	J	AA	0.001 µF,50V
C390	VCKYMN1HB102K	J	AA	0.001 µF,50V
C391	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C392	VCKYMN1HB102K	J	AA	0.001 µF,50V
C393	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C394	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C395	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C396	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C397	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C398	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C399	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C801,802	VCFYHA1HA224J	J	AC	0.22 µF,50V,Thin Film
C803,804	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C805,806	RC-EZ0046AWZZ	J	AL	2200 µF,35V,Electrolytic
C807	VCEAZW1EW478M	J	AK	4700 µF,25V,Electrolytic
C809,810	VCEA4U1HN476M	J	AC	47 µF,50V,Electrolytic
C811	VCEA4U1VN107M	J	AC	100 µF,35V,Electrolytic
C812	VCEA4U1JN476M	J	AC	47 µF,63V,Electrolytic
C813	VCEA4U1HN107M	J	AC	100 µF,50V,Electrolytic
C814	VCEA4U1JN476M	J	AC	47 µF,63V,Electrolytic
C815	VCEAZA0JW108M	J	AC	1000 µF,6.3V,Electrolytic
C816	VCEA4U1HN105M	J	AC	1 µF,50V,Electrolytic
C817	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C818	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C819	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C820,821	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C822	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C823	VCEA4U1HN105M	J	AC	1 µF,50V,Electrolytic
C824	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C825	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C826	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C827	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C828,829	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C830	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C831	VCKYPA1HF223Z	J	AB	0.022 µF,50V
⚠ C900	RC-KZ001LAWZZ	J	AB	0.0047 µF,250V
C901,902	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C903	VCEAZA1EW477M	J	AD	470 µF,25V,Electrolytic [For MD-MX30]
C903	VCEAZV1VW477M	J	AD	470 µF,35V,Electrolytic [For MD-MX30W]
C1100	RC-KZ0003AWZZ	J	AE	4.7 µF,10V
C1101	VCKYTV0JB105K	J	AD	1 µF,6.3V
C1102	VCKYTV1CF105Z	J	AB	1 µF,16V
C1103	VCKYTV1HB273K	J	AA	0.027 µF,50V
C1104	VCKYTV1HB333K	J	AA	0.033 µF,50V
C1105	VCKYCY1HB332K	J	AA	0.0033 µF,50V
C1106	VCKYTV0JB105K	J	AD	1 µF,6.3V
C1107	VCKYCY1CB333K	J	AA	0.033 µF,16V
C1108	VCKYTV1CB474K	J	AC	0.47 µF,16V
C1109	VCKYTV0JB105K	J	AD	1 µF,6.3V
C1110	VCKYTV1HB472K	J	AA	0.0047 µF,50V
C1111	VCKYTV1CB474K	J	AC	0.47 µF,16V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C1112	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C1113~1117	VCCCCY1HH271J	J	AA	270 pF (CH),50V
C1118	VCKYTV1CF105Z	J	AB	1 µF,16V
C1119	VCKYTV0JB105K	J	AD	1 µF,6.3V
C1200	VCKYTV1CF105Z	J	AB	1 µF,16V
C1201	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1202,1203	VCKYTV1CF105Z	J	AB	1 µF,16V
C1204	VCKYCY1CB473K	J	AA	0.047 µF,16V
C1205	VCKYTV1CF105Z	J	AB	1 µF,16V
C1206	VCKYCY1HB122K	J	AA	0.0012 µF,50V
C1207	VCKYTV1CF105Z	J	AB	1 µF,16V
C1208,1209	VCCCCY1HH120J	J	AA	12 pF (CH),50V
C1210	VCCCCY1HH220J	J	AA	22 pF (CH),50V
C1300	VCCCTV1HH470J	J	AA	47 pF (CH),50V
C1301	VCKYCY1CB273K	J	AA	0.027 µF,16V
C1302	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1303	VCKYTV1CF105Z	J	AB	1 µF,16V
C1304	VCCCTV1HH221J	J	AA	220 pF (CH),50V
C1402	VCKYCY1CB223K	J	AA	0.022 µF,16V
C1403	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1404	VCKYCY1CB473K	J	AA	0.047 µF,16V
C1405	VCKYCY1HB681K	J	AA	680 pF,50V
C1406	VCKYCY1HB681K	J	AA	680 pF,50V
C1407	VCKYCY1CB473K	J	AA	0.047 µF,16V
C1409	VCKYTV1CF105Z	J	AB	1 µF,16V
C1411	VCKYCY1CB223K	J	AA	0.022 µF,16V
C1501	VCKYTV1CF105Z	J	AB	1 µF,16V
C1502	VCCCTV1HH331J	J	AA	330 pF (CH),50V
C1503	VCKYTQ1CB334K	J	AC	0.33 µF,16V
C1505	VCKYCY1CB473K	J	AA	0.047 µF,16V
C1506	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1507	VCKYCY1CB473K	J	AA	0.047 µF,16V
C1509	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1601~1604	VCCSCY1HL821J	J	AA	820 pF,50V
C1606	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1607	VCKYTV1CF105Z	J	AB	1 µF,16V
C1610	RC-KZ0003AWZZ	J	AE	4.7 µF,10V
C1611,1612	VCKYCY1HB562K	J	AA	0.0056 µF,50V
C1613	VCKYCY1EB153K	J	AA	0.015 µF,25V
C1615	VCKYCY1EB153K	J	AA	0.015 µF,25V
C1616	VCEAPS107AF1A	J	AD	100 µF,10V,Electrolytic
C1619	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C1655	VCKYCY1EB153K	J	AA	0.015 µF,25V
C1700,1701	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1702	VCKYCY1HB102K	J	AA	0.001 µF,50V
C1703	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1704	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1705	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1706	VCKYTV1HF103Z	J	AA	0.01 µF,50V
C1707	VCKYTV1CF105Z	J	AB	1 µF,16V
C1708,1709	VCKYTV1HF103Z	J	AA	0.01 µF,50V
C1710	RC-EZ1620AFZZ	J	AC	10 µF,16V,Electrolytic
C1711	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1712	RC-EZ1620AFZZ	J	AC	10 µF,16V,Electrolytic
C1713	VCKYTV1HF103Z	J	AA	0.01 µF,50V
C1714	VCKYTV1CF105Z	J	AB	1 µF,16V
C1715	VCKYTV1CB104K	J	AA	0.1 µF,16V
C1716	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1741	VCCSCY1HL821J	J	AA	820 pF,50V
C1750	VCCSCY1HL821J	J	AA	820 pF,50V
C1800	VCEAPS227AF0G	J	AC	220 µF,4V,Electrolytic
C1801	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1802	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1803	VCEAPS107AF1A	J	AD	100 µF,10V,Electrolytic
C1804	VCKYTQ1CF225Z	J	AB	2.2 µF,16V
C1805	VCKYTV1CF105Z	J	AB	1 µF,16V
CD01~03	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
CD05	VCKYBT1HB151K	J	AA	150 pF,50V
CD06	VCKYMN1HB151K	J	AA	150 pF,50V
CD07	VCTYMN1CY103K	J	AA	0.01 µF,16V
CD08	VCCCMN1HH150J	J	AA	15 pF (CH),50V
CD09	VCCCMN1HH180J	J	AA	18 pF (CH),50V
CD10	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD11	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
CD12,13	VCKYMN1HB102K	J	AA	0.001 µF,50V
CD14	VCKYMN1HB151K	J	AA	150 pF,50V
CD15	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD16	VCEAZA0JW227M	J	AC	220 µF,6.3V,Electrolytic
CD17	VCKYBT1HB101K	J	AA	100 pF,50V
CD18	VCKYMN1HB101K	J	AA	100 pF,50V
CD19,20	VCKYBT1HB102K	J	AA	0.001 µF,50V
CD22	VCEAZA0JW107M	J	AC	100 µF,6.3V,Electrolytic
CD23,24	VCCSMN1HL470J	J	AA	47 pF,50V
CD25	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD26~28	VCCSMN1HL470J	J	AA	47 pF,50V
CDA1	VCEAZA1CW336M	J	AB	33 µF,16V,Electrolytic [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
CS01,02	VCQYKA1HM823K	J	AC	0.082 µF,50V,Mylar
CS03,04	VCTYMN1CX472M	J	AA	0.0047 µF,16V
CS08,09	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
CS10	VCKYPA1HF223Z	J	AB	0.022 µF,50V
CS11	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CS14,15	VCQYKA1HM153K	J	AB	0.015 µF,50V,Mylar
CU01,02	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CU05~08	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CU09,10	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
CU11,12	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CU13,14	VCQYKA1HM102K	J	AA	0.001 µF,50V,Mylar
CU15,16	VCEAEA1HW224M	J	AB	0.22 µF,50V,Electrolytic
CU17,18	VCEAEA1HW334M	J	AB	0.33 µF,50V,Electrolytic
CU19,20	VCCSBT1HL470J	J	AA	47 pF,50V
CU21,22	VCCSMN1HL470J	J	AA	47 pF,50V
CU30	VCEAEA1CW226M	J	AB	22 µF,16V,Electrolytic
CU31	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CU32	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
CU34	VCEAEA1CW226M	J	AB	22 µF,16V,Electrolytic
CU37	VCTYPA1CX103K	J	AA	0.01 µF,16V
CU38	VCEAEA1HW475M	J	AB	4.7 µF,50V,Electrolytic
CU39	VCTYPA1CX103K	J	AA	0.01 µF,16V
CU40	VCEAZA1AW477M	J	AC	470 µF,10V,Electrolytic
CU41	VCKYMN1HB102K	J	AA	0.001 µF,50V
CU42	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CU43,44	VCEAEA1HW475M	J	AB	4.7 µF,50V,Electrolytic
CU45	RC-EZ0004AWZZ	J	AD	3.3 µF,16V,Electrolytic
CU46~48	VCKYBT1HB102K	J	AA	0.001 µF,50V
CU49	VCKYMN1HB471K	J	AA	470 pF,50V
CU50	VCKYBT1HB102K	J	AA	0.001 µF,50V
CV01,02	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
CV03,04	VCCSBT1HL470J	J	AA	47 pF,50V
CV05,06	VCKYMN1HB221K	J	AA	220 pF,50V
CV07,08	RC-EZ0047AWZZ	J	AC	10 µF,50V,Electrolytic
CV09,10	VCCSBT1HL3R3K	J	AA	3.3 pF,50V
CV11,12	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CV13~16	VCFYHA1HA224J	J	AC	0.22 µF,50V,Thin Film
CV29,30	VCKYBT1HB102K	J	AA	0.001 µF,50V
CV50	VCEA4U1VN107M	J	AC	100 µF,35V,Electrolytic
CV51	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
CV52	VCKYPA1HF223Z	J	AB	0.022 µF,50V
CV53	VCEA4U1VN107M	J	AC	100 µF,35V,Electrolytic
CV54	VCEA4U1HN106M	J	AC	10 µF,50V,Electrolytic
CV55	VCKYPA1HF223Z	J	AB	0.022 µF,50V
CV56~58	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CV59,60	VCKYMN1HB102K	J	AA	0.001 µF,50V
CV61,62	VCKYBT1HB102K	J	AA	0.001 µF,50V
CV63	VCKYMN1HB102K	J	AA	0.001 µF,50V
CV64	VCEAZA1AW227M	J	AB	220 µF,10V,Electrolytic [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]

RESISTORS

	VRD-MN2BD000C	J	AA	0 ohm,Jumper,ø1.4×3.5mm,Ivory
	VRS-CY1JB000J	J	AA	0 ohm,Jumper,0.8×1.55mm,Green
	VRS-TV2AB000J	J	AA	0 ohm,Jumper,1.25×2mm,Green
R3	VRD-MN2BD823J	J	AA	82 kohms,1/8W
R4	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R5	VRD-MN2BD393J	J	AA	39 kohms,1/8W
R6	VRD-ST2CD273J	J	AA	27 kohms,1/6W
R7	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R8	VRD-MN2BD331J	J	AA	330 ohms,1/8W
R10	VRD-MN2BD273J	J	AA	27 kohms,1/8W
R11	VRD-MN2BD123J	J	AA	12 kohms,1/8W
R12	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R13	VRD-ST2CD681J	J	AA	680 ohms,1/6W
R14	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
R15	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R16	VRD-ST2CD151J	J	AA	150 ohms,1/6W
R17	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R19	VRD-ST2CD330J	J	AA	33 ohms,1/6W
R20	VRD-MN2BD221J	J	AA	220 ohms,1/8W
R21	VRD-MN2BD391J	J	AA	390 ohms,1/8W
R22	VRD-ST2CD391J	J	AA	390 ohms,1/6W
R23	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R24	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R35	VRD-ST2CD183J	J	AA	18 kohms,1/6W
R36	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R38	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R39	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R40	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
R41	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R42	VRD-MN2BD124J	J	AA	120 kohms,1/8W
R44	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R45	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
R47	VRD-ST2EE3R3J	J	AA	3.3 ohms,1/4W
R48	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R50	VRD-ST2CD390J	J	AA	39 ohms,1/6W
R55,56	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R57	VRD-ST2CD100J	J	AA	10 ohm,1/6W
R59	VRD-ST2EE101J	J	AA	100 ohm,1/4W
R60~63	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R67,68	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R69,70	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R71~77	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R79	VRD-ST2CD395J	J	AA	3.9 Mohms,1/6W
R80	VRD-MN2BD105J	J	AA	1 Mohm,1/8W
R81~83	VRD-MN2BD101J	J	AA	100 ohm,1/8W
R84~86	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R87	VRD-MN2BD101J	J	AA	100 ohm,1/8W
R88	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R89,90	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R91	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R301	VRD-ST2CD151J	J	AA	150 ohms,1/6W
R323	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R336	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R345	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R350	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
R351	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R352	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R353	VRD-MN2BD271J	J	AA	270 ohms,1/8W
R354	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R355	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R356	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R357	VRD-ST2CD474J	J	AA	470 kohms,1/6W
R358	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
R359	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
R360	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R361,362	VRD-ST2CD152J	J	AA	1.5 kohms,1/6W [For MD-MX30W]
R361,362	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W [For MD-MX30]
R363,364	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W [For MD-MX30W]
R363,364	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W [For MD-MX30]
R369	VRD-ST2CD751J	J	AA	750 ohms,1/6W
R370	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R371	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R372~374	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R376	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R377	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R378	VRD-MN2BD823J	J	AA	82 kohms,1/8W
R379	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R380	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R381	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R382	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R383~385	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R389	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R391,392	VRD-ST2EE391J	J	AA	390 ohms,1/4W
R393	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R395	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R399	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R801	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R802	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R803	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R804,805	VRD-RT2HD221J	J	AA	220 ohms,1/2W
R808	VRD-RT2HD101J	J	AA	100 ohm,1/2W
R809	VRD-RT2HD560J	J	AA	56 ohms,1/2W
R810,811	VRD-RT2HD272J	J	AA	2.7 kohms,1/2W
⚠ R812	VRG-ST2HC100J	J	AB	100 ohm,1/2W,Fusible
R813,814	VRD-ST2EE331J	J	AA	330 ohms,1/4W
R815,816	VRD-ST2EE471J	J	AA	470 ohms,1/4W
R820	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R821	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R823,824	VRD-ST2CD104J	J	AA	100 kohm,1/6W
R827	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R902	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R903	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R904,905	VRD-ST2CD102J	J	AA	1 kohm,1/6W [For MD-MX30W]
R906	VRD-ST2HD272J	J		2.7 kohms,1/2W [For MD-MX30W]
R1100	VRS-TQ2BB270J	J	AA	27 ohms,1/8W
R1101	VRS-CY1JB1R0J	J	AA	1 ohm,1/16W
R1102	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1103	VRS-CY1JB394J	J	AA	390 kohms,1/16W
R1105	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R1106	VRS-CY1JB563J	J	AA	56 kohms,1/16W
R1107	VRS-CY1JB561J	J	AA	560 ohms,1/16W
R1108~1112	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1200,1201	VRS-CY1JB104F	J	AA	100 kohm,1/16W
R1202,1203	VRS-CY1JB124F	J	AA	120 kohms,1/16W
R1204,1205	VRS-CY1JB823J	J	AA	82 kohms,1/16W
R1206,1207	VRS-CY1JB623J	J	AA	62 kohms,1/16W
R1208	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1209	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R1210	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1211	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1212	VRS-CY1JB470J	J	AA	47 ohms,1/16W
R1214	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1215	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R1217	VRS-CY1JB151J	J	AA	150 ohms,1/16W
R1300	VRS-TV2AB8R2J	J	AA	8.2 ohms,1/10W
R1301	VRS-CY1JB100J	J	AA	10 ohm,1/16W
R1304	VRS-TV2AB151J	J	AA	150 ohms,1/10W
R1401	VRS-CY1JB272J	J	AA	2.7 kohms,1/16W
R1403	VRS-CY1JB471J	J	AA	470 ohms,1/16W
R1405	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1406	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1407	VRS-CY1JB332J	J	AA	3.3 kohms,1/16W
R1408	VRS-CY1JB332J	J	AA	3.3 kohms,1/16W
R1414	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R1415	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1417,1418	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1420	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1424	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1430	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1435	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1440	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R1441	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1443	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1444	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1460,1461	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1463	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1510	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1511	VRS-CY1JB822J	J	AA	8.2 kohms,1/16W
R1512	VRS-TV2AB470J	J	AA	47 ohms,1/10W
R1513	VRS-CY1JB822J	J	AA	8.2 kohms,1/16W
R1515,1516	VRS-CY1JB182J	J	AA	1.8 kohms,1/16W
R1517,1518	VRS-CY1JB470J	J	AA	47 ohms,1/16W
R1520	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1521	VRS-CY1JB121J	J	AA	120 ohms,1/16W
R1523	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1526	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1527	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1529	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1532	VRS-CY1JB332J	J	AA	3.3 kohms,1/16W
R1533~1535	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1536	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1537	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1538	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1539	VRS-CY1JB121J	J	AA	120 ohms,1/16W
R1600,1601	VRS-CY1JB682F	J	AA	6.8 kohms,1/16W
R1605,1606	VRS-CY1JB103F	J	AA	10 kohm,1/16W
R1612	VRS-CY1JB154F	J	AA	150 kohms,1/16W
R1614	VRS-CY1JB104F	J	AA	100 kohm,1/16W
R1616,1617	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1618	VRS-CY1JB153J	J	AA	15 kohms,1/16W
R1620	VRS-CY1JB153J	J	AA	15 kohms,1/16W
R1621	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1622,1623	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1624	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1701	VRS-CY1JB393J	J	AA	39 kohms,1/16W
R1702	VRS-CY1JB303J	J	AA	30 kohms,1/16W
R1703	VRS-CY1JB102F	J	AA	1 kohm,1/16W
R1704	VRS-CY1JB332F	J	AA	3.3 kohms,1/16W
R1705	VRS-CY1JB821J	J	AA	820 ohms,1/16W
R1706	VRS-CY1JB393J	J	AA	39 kohms,1/16W
R1707	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R1708	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1709	VRS-CY1JB393J	J	AA	39 kohms,1/16W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R1710	VRS-CY1JB684J	J	AA	680 kohms,1/16W
R1711	VRS-TV2AB120J	J	AA	12 ohms,1/10W
R1712	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1714	VRS-TV2AB120J	J	AA	12 ohms,1/10W
R1716	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1801	VRS-CY1JB271J	J	AA	270 ohms,1/16W
R1802	VRS-CY1JB563F	J	AA	56 kohms,1/16W
R1803	VRS-CY1JB333F	J	AA	33 kohms,1/16W
R1804	VRS-CY1JB391J	J	AA	390 ohms,1/16W
R1805	VRS-CY1JB271J	J	AA	270 ohms,1/16W
R1806	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1807	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1808	VRS-CY1JB182J	J	AA	1.8 kohms,1/16W
R1809	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1811	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1930	VRS-TV2AB391J	J	AA	390 ohms,1/10W
R1931	VRS-TV2AB561J	J	AA	560 ohms,1/10W
R1932	VRS-TV2AB121J	J	AA	120 ohms,1/10W
R1933	VRS-TV2AB271J	J	AA	270 ohms,1/10W
RD01~04	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD05	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD06	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD07	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD08	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD09	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD10	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD11,12	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD13	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD14	VRD-MN2BD821J	J	AA	820 ohms,1/8W
RD15,16	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD17~20	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD21	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD22	VRD-MN2BD183J	J	AA	18 kohms,1/8W
RD23	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD24	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD26	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD27	VRD-MN2BD220J	J	AA	22 ohms,1/8W
RD32	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD33	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
RD34,35	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD36	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD37	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
RD38	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
RD39,40	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD41	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD42	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD43	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD44	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD45	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD46	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD47	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W [MD-MX30]
RD48	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD49	VRD-MN2BD180J	J	AA	18 ohms,1/8W
RD51	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD52	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD53	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
RD54	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
RD55	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
RD56	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
RD57	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
RD58	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD59	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD60	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
RD61	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
RD62	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
RD63	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
RD64	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
RD65	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
RD66	VRD-ST2CD183J	J	AA	18 kohms,1/6W
RD68	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD69	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD70	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
RD71	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
RD72	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
RD73	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
RD78	VRD-MN2BD101J	J	AA	100 ohm,1/8W
RD80	VRD-MN2BD820J	J	AA	82 ohms,1/8W
RD81,82	VRD-RT2HD221J	J	AA	220 ohms,1/2W
RD83	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD84	VRD-ST2CD183J	J	AA	18 kohms,1/6W
RD89	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RDA1	VRD-ST2CD103J	J	AA	10 kohm,1/6W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
RDA2	VRD-ST2CD823J	J	AA	82 kohms,1/6W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
RS01,02	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RS03,04	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RS05,06	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
RS07,08	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RS09	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RS10	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RS11	VRD-ST2CD821J	J	AA	820 ohms,1/6W
RS12	VRD-MN2BD821J	J	AA	820 ohms,1/8W
RS13,14	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RS15	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
RS16	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RS17	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RS18,19	VRD-ST2EE221J	J	AA	220 ohms,1/4W
RS20	VRD-ST2CD473J	J	AA	47 kohms,1/6W
RU01,02	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU05~08	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU09	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
RU10	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
RU11	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RU12	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU13,14	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RU15	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RU16	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RU17	VRD-MN2BD473J	J	AA	47 kohms,1/8W
RU18	VRD-ST2CD473J	J	AA	47 kohms,1/6W
RU19,20	VRD-MN2BD273J	J	AA	27 kohms,1/8W
RU21,22	VRD-ST2CD471J	J	AA	470 ohms,1/6W
RU23,24	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU30~32	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU33,34	VRD-RT2HD221J	J	AA	220 ohms,1/2W
RU39,40	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RU41	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RU42	VRD-MN2BD473J	J	AA	47 kohms,1/8W
RU43	VRD-ST2CD473J	J	AA	47 kohms,1/6W
RU45	VRD-ST2CD223J	J	AA	22 kohms,1/6W
RU46	VRD-MN2BD473J	J	AA	47 kohms,1/8W
RU48	VRD-ST2CD681J	J	AA	680 ohms,1/6W
RU49	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RU50,51	VRD-ST2CD151J	J	AA	150 ohms,1/6W
RU52~54	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
RU55	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RU56	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RU57	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RU58	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RU59	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU60	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RU61	VRD-ST2CD183J	J	AA	18 kohms,1/6W
RU67	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RV01,02	VRD-ST2CD393J	J	AA	39 kohms,1/6W
RV03~08	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RV09,10	VRD-ST2CD393J	J	AA	39 kohms,1/6W
RV11,12	VRS-VV3AAR20J	J	AB	0.2 ohms,1W
RV13,14	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
RV15,16	VRD-ST2CD682J	J	AA	6.8 kohms,1/6W
RV17,18	VRD-ST2EE4R7J	J	AA	4.7 ohms,1/4W
RV19,20	VRD-ST2CD223J	J	AA	22 kohms,1/6W
RV21,22	VRD-ST2CD563J	J	AA	56 kohms,1/6W
RV50	VRD-ST2CD682J	J	AA	6.8 kohms,1/6W
⚠ RV51,52	VRG-ST2EC101J	J	AB	100 ohm,1/4W,Fusible
RV53	VRD-ST2CD563J	J	AA	56 kohms,1/6W
RV54	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RV55	VRD-ST2CD474J	J	AA	470 kohms,1/6W
RV56	VRD-ST2EE471J	J	AA	470 ohms,1/4W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
RV56	VRD-ST2EE561J	J	AA	560 ohms,1/4W [For MD-MX30:To Serial No.003xxxxx]
RV57,58	VRD-RT2HD470J	J	AA	47 ohms,1/2W
RV59	VRD-ST2EE152J	J	AA	1.5 kohms,1/4W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
RV59	VRD-ST2EE561J	J	AA	560 ohms,1/4W [For MD-MX30:To Serial No.003xxxxx]
RV60	VRD-ST2EE100J	J	AA	10 ohm,1/4W
RV61	VRD-ST2CD100J	J	AA	10 ohm,1/6W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
RV62	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV63	VRD-RT2HD103J	J	AA	10 kohm,1/2W
RV64	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RV65	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV66	VRD-RT2HD390J	J	AA	39 ohms,1/2W
RV67	VRD-ST2CD183J	J	AA	18 kohms,1/6W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
RV68	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
RV69	VRD-ST2EE822J	J	AA	8.2 kohms,1/4W [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]

OTHER CIRCUITRY PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
BI1/CNS1	QCNWN0862AWZZ	J	AF	Connector Ass'y,7-7Pin
BI2/CNS2	QCNWN0861AWZZ	J	AF	Connector Ass'y,8-8Pin
BI3/CNS3	QCNWN0541AWZZ	J	AF	Connector Ass'y,6-6Pin
BI801/CNS901	QCNWN1533AWZZ	J	AF	Connector Ass'y,4-4Pin
BI802- 1,2	QCNWN1534AWZZ	J	AC	Flat Wire,3Pin
⚠ BI900/CNS900	QCNWN1529AWZZ	J	AG	Connector Ass'y,3-3Pin [For MD-MX30]
⚠ BI900/CNS900	QCNWN1531AWZZ	J		Connector Ass'y,9-9Pin [For MD-MX30W]
BI902/CNS802	QCNWN1530AWZZ	J	AG	Connector Ass'y,10-10Pin
BID02/CNSV02	QCNWN1588AWZZ	J	AH	Connector Ass'y,5-5Pin
BID03	QCNWN1628AWZZ	J	AC	Lead Wire Ass'y,with Lug
BIDA1	QCNWN1687AWZZ	J		Connector Ass'y,2Pin [For MD-MX30W/MD-MX30:Serial No.004xxxxx~]
BIU01/CNS8	QCNWN1589AWZZ	J	AF	Connector Ass'y,2-3Pin
BIU02	QCNWN1621AWZZ	J	AC	Lead Wire Ass'y,with Lug [For MD-MX30]
BIV01	QCNWN1621AWZZ	J	AC	Lead Wire Ass'y,with Lug
CN1101	QCNCWYK28AFZZ	J	AH	Socket,28Pin
CN1300	QCNCM970BAFZZ	J	AD	Plug,2Pin
CN1401	QCNCWXC05AFZZ	J	AC	Plug,5Pin
CN1402	QCNCWXC06AFZZ	J	AD	Plug,6Pin
CN1501	QCNCWXC28AFZZ	J	AG	Plug,28Pin
CN1502	QCNCM970DAFZZ	J	AE	Plug,4Pin
CN1931	QCNCWXC05AFZZ	J	AC	Plug,5Pin
CN1932	QCNCWXC06AFZZ	J	AD	Plug,6Pin
CNP3	92LCONE6P53254	J	AC	Plug,6Pin
CNP4	92LCONE5P53253	J	AB	Plug,5Pin
CNP5	QCNCM705BAFZZ	J	AA	Plug,2Pin
CNP6	QCNCWZP08AWZZ	J	AC	Socket,8Pin
CNP7	QCNCM705DAFZZ	J	AB	Plug,4Pin
CNP8	92LCONE3P53253	J	AB	Plug,3Pin
CNP9	QCNCWYS11AWZZ	J	AD	Socket,11Pin
CNP302	QCNCWZO10AWZZ	J	AC	Socket,10Pin
CNP802	QCNCM610KAFZZ	J	AC	Plug,10Pin
⚠ CNP900	QCNCM049BAWZZ	J	AC	Plug,3Pin [For MD-MX30]
⚠ CNP900	QCNCM049EAWZZ	J	AD	Plug,9Pin [For MD-MX30W]
CNP901	92LCONE4P53253	J	AB	Plug,4Pin
CNPD01	QCNCWYX22AWZZ	J	AE	Socket,22Pin
CNPD02	QCNCWYX11AWZZ	J	AD	Socket,11Pin
CNPD03	QCNCWYX04AWZZ	J	AC	Socket,4Pin
CNPD04	QCNCW045DAWZZ	J		Plug,4Pin
CNPU01	QCNCWYW22AWZZJ		AE	Socket,22Pin
CNPU02	QCNCWZI10AWZZ	J	AF	Socket,10Pin
CNPU04	QCNCWYW28AWZZJ		AK	Socket,28Pin
CNPU05	QCNCWZP08AWZZ	J	AC	Socket,8Pin
CNPU06	QCNCWZP10AWZZ	J	AC	Socket,10Pin
CNPV01	QCNCM704BAFZZ	J	AA	Plug,2Pin
CNPV02	92LCONE5P53254	J	AB	Plug,5Pin
CNS4	QCNWN1591AWZZ	J	AE	Connector Ass'y,5Pin
CNS5	QCNWN1568AWZZ	J		Connector Ass'y,2Pin
CNS10	QCNWN1592AWZZ	J	AC	Lead Wire Ass'y,1-1Pin
CNSD01	QCNCMZR10AWZZ	J	AB	Plug,10Pin
CNSV01	QCNWN1532AWZZ	J	AD	Connector Ass'y,2Pin
CORE1	RCORF0015AWZZ	J	AB	CORE
CW1501	QCNWN1549AWZZ	J	AQ	Flat Cable,28Pin
CW1502/CNS7	QCNWN1515AWZZ	J	AK	Connector Ass'y,4-4Pin
CW1931	QCNWN1512AWZZ	J	AC	Flat Cable,5Pin
CW1932	QCNWN1513AWZZ	J	AC	Flat Cable,6Pin
⚠ F801,802	QFS-D402CAWNI	J	AC	Fuse,T4A L 250V [For MD-MX30W]
⚠ F801,802	QFS-D402DAWNI	J	AC	Fuse,4A,125V [For MD-MX30]
⚠ F803	QFS-D252BSJNI	J	AB	Fuse,2.5A,125V [For MD-MX30]
⚠ F803	QFS-D252CAWNI	J	AC	Fuse,T2.5A L 250V [For MD-MX30W]
⚠ F803	92LFUSE-T252-D	J	AD	Fuse,2.5A/250V [MD-MX30]
⚠ F900	QFS-D202CAWNI	J		Fuse,T2A L 250V [For MD-MX30W]
FE301	RTUNS0014AWZZ	J	AR	FM Front End
FLD01	VVKBJ747GNK-1	J		FL Display
FWD01	QCNWN1525AWZZ	J	AD	Flat Cable,22Pin
FWD02	QCNWN1526AWZZ	J	AF	Flat Cable,11Pin
FWD03	QCNWN1587AWZZ	J	AD	Flat Cable,4Pin
FWU05	QCNCN1527AWZZ	J		Flat Cable,8Pin
FWU06	QCNCN1528AWZZ	J		Flat Cable,10Pin
JD01	QJAKM0017AWZZ	J	AF	Jack,Phones
JTU01	QSOCJ0220AWZZ	J	AD	Jack [AUX INPUT]
K10	QLUGP0002AWZZ	J	AB	Lug,Pin
LUGV01	QLUGP0001AWZZ	J	AC	Lug
M1	92LMTR2790CASY	J	BB	Motor with Chassis [Spindle]
M2	92LMTR1854BASY	J	AP	Motor with Gear
M4	92LMTR1746A	J	AN	CD Motor with Pulley
M5	RMOTV0027AWZZ	J	AM	Motor,Volume Move
M901	RMOTV0025AWZZ	J	AV	Motor Ass'y,MD Spindle
M902	92LMTR3167BASY	J	AP	Motor Ass'y,MD Sled
M903	92LMTR3167AASY	J	AN	Motor Ass'y,MD Loading
MV01	RMOTV0027AWZZ	J	AM	Motor,Air Cooling Fan
⚠ RL900	RRLYD0004SJZZ	J	AG	Relay
RMD01	VHLN64H380A-1	J	AK	Remote Sensor,N64H380A
SO301B	QTANC0301AWZZ	J	AH	Terminal,FM Antenna
⚠ SO900	QSOCA0212AWZZ	J	AD	Socket AC Input [For MD-MX30W]
⚠ SO900	QSOCA0214AWZZ	J	AD	Socket AC Input [For MD-MX30]
SOV01	QTANA0415AWZZ	J	AD	Terminal,Speaker
SW2	QSW-F9001AW01	J	AD	Switch,Push Type [Picup In]
SW4	92LSWICHL1749A	J	AD	Switch,Push Type [OPEN/CLOSE]
⚠ SW900	QSOCE0008AWZZ	J	AH	Switch,Rotary Type,Voltage Selector [For MD-MX30W]
SW1930	QSW-P0011AWZZ	J	AD	Switch,Push Type [WRITE PRO]
SW1931	QSW-P0012AWZZ	J	AD	Switch,Push Type [DISC MEDIA]
SW1932	QSW-M0007AWZZ	J	AD	Switch,Push Type [Roading]
SW1933	QSW-M0007AWZZ	J	AD	Switch,Push Type [Record]
SW1934	QSW-M0007AWZZ	J	AD	Switch,Push Type [Play]
SW1936	QSW-M0157AFZZ	J	AD	Switch,Slide Type [Lead In]
SWD01	QSW-Z0008AWZZ	J	AF	Switch,Push Type [MULTI JOG]
SWD02	QSW-Z0009AWZZ	J	AF	Switch,Push Type [VOLUME]
SWD03	92LSWICHT1663	J	AC	Switch,Key Type [MEMORY/ENTER]
SWD04	92LSWICHT1663	J	AC	Switch,Key Type [TUNNING UP]
SWD05	92LSWICHT1663	J	AC	Switch,Key Type [MD PLAY]
SWD06	92LSWICHT1663	J	AC	Switch,Key Type [MD STOP]
SWD07	92LSWICHT1663	J	AC	Switch,Key Type [TUNNING DOWN]
SWD08	92LSWICHT1663	J	AC	Switch,Key Type [TIMER/DELETE]
SWD09	92LSWICHT1663	J	AC	Switch,Key Type [NAME/TOC EDIT]
SWD10	92LSWICHT1663	J	AC	Switch,Key Type [ON/STAND BY]
SWD11	92LSWICHT1663	J	AC	Switch,Key Type [DISPLAY (DEMO)]
SWD12	92LSWICHT1663	J	AC	Switch,Key Type [REC]
SWD13	92LSWICHT1663	J	AC	Switch,Key Type [CD MD EDIT,NORMAL]
SWD14	92LSWICHT1663	J	AC	Switch,Key Type [CD MD EDIT,HIGH]
SWD15	92LSWICHT1663	J	AC	Switch,Key Type [CD EJECT]
SWD16	92LSWICHT1663	J	AC	Switch,Key Type [CD STOP]
SWD17	92LSWICHT1663	J	AC	Switch,Key Type [CD PLAY]
SWD18	92LSWICHT1663	J	AC	Switch,Key Type [MD EJECT]
SWD20	92LSWICHT1663	J	AC	Switch,Key Type [VOLUME SELECT]
SWD21	92LSWICHT1663	J	AC	Switch,Key Type [AUX]
SWD22	92LSWICHT1663	J	AC	Switch,Key Type [TUNER (BAND)]
SWD23	92LSWICHT1663	J	AC	Switch,Key Type [X-BASS]
SWD24	92LSWICHT1663	J	AC	Switch,Key Type [EQUALIZER]
SWD25	92LSWICHT1663	J	AC	Switch,Key Type [SURROUND]
SWU01	QSW-S0024AWZZ	J	AE	Switch,Slide Type,SPAN SELECTOR [For MD-MX30W]

CD MECHANISM PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
301	NGERH0011AWZZ	J	AC	Gear,Middle
302	NGERH0012AWZZ	J	AC	Gear,Drive
303	MLEVP0080AWZZ	J	AC	Rail,Guide

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
304	NSFTM0020AWFW	J	AD	Shaft,Guide
305	92LM-CUSN1524A	J	AC	Cushion
⚠306	92LHPC1XASY	J		Pickup Unit Ass'y
306- 1	————		—	Pickup Unit (Not Replacement Item)
306- 2	NGERR0043AFZZ	J	AC	Gear,Rack
306- 3	MSPRC0961AFZZ	J	AA	Spring,Rack
701	XBDDS26P06000	J		Screw,ø2.6×6mm
702	XHBSD20P05000	J	AA	Screw,ø2×5mm
703	XBBSD20P03000	J	AA	Screw,ø2×3mm
704	LX-WZ1070AFZZ	J	AA	Washer,ø1.5×ø3.8×0.25mm
M1	92LMTR2790CASY	J	BB	Motor with Chassis [Spindle]
M2	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
SW2	QSW-F9001AW01	J	AD	Switch,Push Type [Pickup In]

MD MECHANISM PARTS

2	LCHSM0089AWZZ	J	AH	Drive Chassis (A)
3	LCHSM0090AWZZ	J	AH	Drive Chassis (B)
4	LHLDX3007AWM1	J	AH	Holder Ass'y.,Cartridge
5	MLEVF0051AWM1	J	AK	Lever Ass'y.,Slider
7	MLEVF0046AWFW	J	AE	Arm,Holder
8	MLEVF0047AWFW	J	AC	Lever,Switch
9	MLEVF0048AWFW	J	AC	Arm,H/A Shift
10	MLEVP0095AWZZ	J	AC	Lever,Cam Plate
12	MSPRD0132AWFJ	J	AB	Spring,Roading
14	MSPRP0030AWFJ	J	AB	Spring,Grip
15	MSPRP0031AWFJ	J	AC	Spring,Shaft
16	MSPRT0031AWFJ	J	AC	Spring,Roading Arm
17	MSPRT0032AWFJ	J	AB	Spring,Shift Arm
18	NGERH0085AWZZ	J	AC	Gear,Loading (A)
19	NGERH0086AWZZ	J	AB	Gear,Middle (A)
20	NGERH0087AWZZ	J	AB	Gear,Middle (B)
21	NGERH0088AWZZ	J	AC	Gear,Middle (C)
22	NGERH0089AWZZ	J	AC	Gear,Middle (D)
24	NGERR0004AWZZ	J	AC	Gear,Grip
27	NSFTD0006AWM1	J	AG	Shaft Ass'y.,Drive
28	NSFTM0019AWFW	J	AC	Shaft,Pickup Slide
30	PCOVS3029AWFW	J	AG	Cover,Shield,Top
31	PCOVS3033AWFW	J	AF	Cover,Shield,Side
32	PCOVS3031AWFW	J	AG	Cover,Shield,Bottom
33	PCUSG0045AWZZ	J	AC	Cushion
34	RCILH0113AFZZ	J	AS	Magnetic Head
⚠35	RCTRH8198AFZZ	J	BM	MD Optical Pickup Ass'y
36	MSPRT0034AWFJ	J	AB	Spring,Ground
501	LX-BZ0040AWZZ	J	AB	Screw,ø1.4×1.5mm
502	LX-BZ0046AWZZ	J	AB	Screw,ø2×2mm
503	LX-BZ0800AFZZ	J	AA	Screw,ø1.4×2.5mm
504	LX-BZ0883AFZZ	J	AB	Screw,ø1.7×5mm
505	LX-JZ0020AWZZ	J	AB	Screw,ø1.4×3mm
506	LX-JZ0022AWZZ	J	AB	Screw,ø1.7×6mm
507	LX-JZ0024AWZZ	J	AB	Screw,ø1.4×4.5mm
509	XBPSD20P03K00	J	AB	Screw,ø2×3mm
510	XSPSN17P03K00	J	AB	Screw,ø1.7×3mm
511	XWSSD14-05000	J	AA	Washer,ø1.4×0.5mm
512	LX-BZ0846AFZZ	J	AB	Screw,ø1.7×3mm
513	LX-JZ0025AWZZ	J	AB	Screw,ø1.4×5mm
M901	RMOTV0025AWZZ	J	AV	MD Spindle Motor Ass'y
M902	92LMTR3167BASY	J	AP	MD Sled Motor Ass'y
M903	92LMTR3167AASY	J	AN	MD Loading Motor Ass'y
SW1930	QSW-P0011AWZZ	J	AD	Switch,Push Type [WRITE PRO]
SW1931	QSW-P0012AWZZ	J	AD	Switch,Push Type [DISC MEDIA]
SW1932	QSW-M0007AWZZ	J	AD	Switch,Push Type [LOADING]
SW1933	QSW-M0007AWZZ	J	AD	Switch,Push Type [RECORD]
SW1934	QSW-M0007AWZZ	J	AD	Switch,Push Type [PLAY]
SW1936	QSW-M0157AFZZ	J	AD	Switch,Slide Type [LEAD IN]

CABINET PARTS

201	GCAB-1183AWSA	J	AR	Cabinet,Top
202	GCABB1199AWSA	J	AK	Cabinet,Rear [For MD-MX30]
202	GCABB1200AWSA	J		Cabinet,Rear [For MD-MX30W]
203	GCOVA1201AWSA	J	AH	Tray,CD
204	GCOVA1249AWSA	J	AG	Cover,CD Tray
205	GDORF0064AWSG	J	AF	Door
206	GITAS0067AWSA	J	AM	Side Panel,Left
207	GITAS0068AWSA	J	AM	Side Panel,Right
208	92LPNL3253CS1	J	AH	Decoration Plate Ass'y,JOG Dial
208- 1	————		—	Decoration Plate (Not Replacement Item)
208- 2	PTPEH0005AWZZ	J	AD	Double Side Tape
209	92LPNL3256AS1	J		Decoration Plate Ass'y
210	92LPNL3256BS1	J		Decoration Plate Ass'y
211	HDECQ0516AWSB	J	AE	Panel,FL Display
212	HDECQ0517AWSA	J	AD	Decoration Plate,Volume
213	HINDP0007AWSA	J	AD	Indicator,Volume
214	HPNLC1252AWSA	J	AR	Panel,Front
215	JKNBK0070AWSA	J	AF	Knob [VOLUME]
216	JKNBK0071AWSA	J	AF	Knob [MULTI JOG]
217	JKNBZ0640AWSA	J	AF	Button [POWER]
218	JKNBZ0641AWSA	J	AF	Button [MD PLAY]
219	JKNBZ0642AWSA	J	AG	Button [CD PLAY]
220	JKNBZ0644AWSA	J	AF	Button [TUNER/AUX]
221	LANGK0181AWFW	J	AE	Bracket,PWB Support (A)
222	LANGK0182AWFW	J	AE	Bracket,PWB Support (B)
223	LANGK0183AWFW	J	AE	Bracket,Fan Motor
224	LANGK0186AWFW	J	AF	Bracket,PWB Support (C)
225	LANGK0187AWFW	J	AE	Bracket,MD Holder Support
226	LANGZ0002AWFW	J	AB	Bracket,Magnet
227	LCHSM0072AWZZ	J	AR	Chassis,CD Reading
228	LCHSM0093AWFW	J	AP	Chassis,Main
229	LCHSZ0018AWZZ	J	AL	Chassis,MD
230	LHLDM1001AWZZ	J	AE	Stabilizer
231	LHLDZ1001AWZZ	J	AE	Holder,Mechanism
232	LHLDZ1238AWZZ	J	AE	Holder,FL Display
233	LHLDZ1239AWZZ	J	AC	Holder,LED
235	MSPRD0108AWFJ	J	AC	Spring,Fan Motor
236	MSPRT0022AWZZ	J	AB	Spring,MD Lid
237	NBRGC0003AWZZ	J	AC	Bearing Metal
238	NFANP0001AWZZ	J	AD	Rotary Fan
239	NGERR0001AWZZ	J	AE	Gear,Rack
240	PCUSG0008AWZZ	J	AB	Cushion,Gum
241	PCUSG0022AWZZ	J	AB	Cushion,Leg
242	PGIDM0031AWZZ	J	AC	Guide
243	PMAGF0001AWZZ	J	AF	Magnet
244	PRDAR0075AWFW	J	AP	Heat Sink
245	PRDAR0146AWFW	J	AQ	Heat Sink
⚠247	QFSHD0001AWZZ	J	AB	Holder,Fuse
248	TSPC-0645AWZZ	J	AC	Label,Specification [For U.S.A.]
248	TSPC-0646AWZZ	J		Label,Specification [For Canada]
248	TSPC-0651AWZZ	J		Label,Specification [For Mexico]
248	TSPC-0674AWZZ	J		Label,Specification [Except for Taiwan/Thailand]
248	TSPC-0675AWZZ	J		Label,Specification [For Taiwan]
248	TSPC-0676AWZZ	J		Label,Specification [For Thailand]
249	92LBADGE1585B	J	AC	Badge,SHARP
250	92LBELT1728A	J	AB	Belt,Drive
251	92LCLMP1810A	J	AC	Wire Holder
252	92LCSPR1431C	J	AA	Spring,Ring
253	92LCUSN1728B1	J	AC	Cushion
254	92LGEAR1728B	J	AC	Gear,Tray
255	92LN-BAND1318A	J	AA	Nylon Band,80mm
256	92LPULLY1728A	J	AB	Pulley,Drive
258	LCHSZ0014AWZZ	J		Chassis,Volume Move
259	LHLDZ1240AWZZ	J	AE	Holder,Volume Motor
260	NBLTK0035AWZZ	J	AC	Belt,Drive
261	NGERH0093AWZZ	J	AE	Gear,Middle
262	NGERW0012AWZZ	J	AD	Worm Pulley
263	PGIDM0029AWZZ	J		Guide
264	TCAUS0028AWZZ	J	AB	Caution Label,Class 3B [For MD-MX30W]
265	92LCAUT1706A	J	AB	Label,Laser Caution [For MD-MX30W]
266	92LCAUT1706B	J	AA	Label,Laser Caution [For MD-MX30W]
267	NPLYM0017AWZZ	J		Motor Pulley (For M5)
601	XBPSD26P05JSO	J	AB	Screw,ø2.6×5mm
602	LX-BZ0880AFZZ	J	AC	Screw,ø2×2.2mm
603	LX-EZ0005AWFD	J	AA	Screw,Special,ø2.6×10mm
604	LX-HZ0082AFZZ	J	AA	Screw,ø4×8mm
605	LX-JZ0010AFFD	J	AA	Screw,ø3×10mm
606	LX-JZ0022AFFD	J	AA	Screw,ø3×10mm
607	XBPSD30P06KSO	J	AB	Screw,ø3×6mm
608	XEBSD26P08000	J	AA	Screw,ø2.6×8mm
609	XEBSD26P10000	J	AA	Screw,ø2.6×10mm
610	XEBSD30P10000	J	AA	Screw,ø3×10mm
611	XHBSD30P06000	J	AA	Screw,ø3×6mm
612	XJBSD30P10000	J	AA	Screw,ø3×10mm
614	XJBSD30P14000	J	AA	Screw,ø3×14mm
615	XJBSF30P10000	J	AA	Screw,ø3×10mm
616	XJBSN30P12000	J	AA	Screw,ø3×12mm
617	XEBSD30P12000	J	AA	Screw,ø3×12mm
618	XBBSD20P05000	J	AA	Screw,ø2×5mm

SPEAKER BOX PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
901	92L10002X10S10	J	BQ	Speaker Box Ass'y
902	92L20100X30H10	J	AR	Net Frame Ass'y
903	92L3141MX30H10	J	AH	Lead Ass'y
904	92L21600X30H20	J		Panel,Tweeter Ass'y
904- 1	————		—	Panel,Tweeter (Not Replacement Item)
904- 2	HDECQ0466AWSA	J		Ring,Tweeter
904- 3	92L436T3248000	J	AD	Double Side Tape
905	HDECQ0535AWSA	J		Panel,Woofer
906	TSPC-0665AWZZ	J		Label,Specification [For CP-MX30]
906	TSPC-0667AWZZ	J		Label,Specification [For CP-MX30W]
907	92L411N74020AB	J	AD	Screw,ø4×20mm
908	92L411B840100P	J	AC	Screw,ø4×10mm
909	PGSK-0001AWZZ	J		Cushion,Tweeter (A)
910	PGSK-0002AWZZ	J		Cushion,Tweeter (B)
SP1,2	VSP0012WBG06A	J	BA	Woofer
SP3,4	VSP0020TBA96A	J	AX	Tweeter

PACKING PARTS (Except for U.S.A)

	SPAKA0229AWZZ	J	AG	Packing Add.
	SPAKA0230AWZZ	J	AG	Packing Add.
	SPAKA0238AWZZ	J		Packing Add.,Speaker
	SPAKC0925AWZZ	J		Packing Case,Speaker
	SPAKC0940AWZZ	J		Packing Case [MD-MX30:Except For U.S.A.]
	SPAKC0941AWZZ	J		Packing Case [For Canada]
	SPAKC1006AWZZ	J		Packing Case [For MD-MX30W]
	SPAKH0024AWZZ	J		Polyethylene Bag,Speaker
	SPAKZ0548AWZZ	J		Case,Accessories [For MD-MX30W]
	SPAKZ0574AWZZ	J	AH	Pad,Unit
	SPAKZ0575AWZZ	J		Pad,Center,Speaker
	SPAKZ0576AWZZ	J		Pad,Top,Speaker
	SPAKZ0577AWZZ	J		Pad,Bottom,Speaker
	SPAKZ0591AWZZ	J	AG	Case,Accessories [For Canada]
	SSAKH0035AWZZ	J	AE	Polyethylene Bag,Unit
	TCAUS0042AWZZ	J	AB	Label,Energy Star Caution [For MD-MX30]
	TLABE0370AWZZ	J		Label,Bar Cord [For MD-MX30W]
	TLABG0002AWZZ	J	AB	Label,Hong Kong
	TLABH0052AWZZ	J	AF	Sheet,E/C Comparison D [For Taiwan]
	TLABH0053AWZZ	J	AF	Sheet,E/C Comparison E [For Taiwan]
	TLABH0054AWZZ	J	AF	Sheet,E/C Comparison F [For Taiwan]
	TLABR1121AWZZ	J	AA	Label,Bar Cord (Not Replacement Item) [For MD-MX30]
	TLABS0231AWZZ1	J	AB	Label,UL Caution [For MD-MX30]
	TLABS0250AWZZ	J		Label,Safety [For Hong Kong]
	TLABZ0594AWZZ	J	AB	Label,Energy Star [For MD-MX30]
	TLABZ0684AWZZ	J	AD	Label,Pop [For MD-MX30]
	TLABZ0719AWZZ	J		Label,Carton [For Taiwan]
	TLABZ0721AWZZ	J		Label,Pop [For MD-MX30W]
	TSPC-0665AWZZ	J		Label,Specification [For CP-MX30]
	TSPC-0667AWZZ	J		Label,Specification [For CP-MX30W]
	92LLABL1204C	J	AA	Label,MADE IN MALAYSIA [For MD-MX30W]
	92LLABL1507B	J	AA	Label,Packing Case,MADE IN MALAYSIA [For MD-MX30W]

ACCESSORIES

	PSHEZ0032AWZZ	J		Cushion,Leg,Speaker
⚠	QACCA0004AW00	J		AC Power Supply Cord [For Saudi Arabia]
⚠	QACCB0008AW00	J	AW	AC Power Supply Cord [For Hong Kong]
⚠	QACCD0025AWZZ	J	AN	AC Power Supply Cord [For MD-MX30]
⚠	QACCE0007AW00	J	AH	AC Power Supply Cord [For MD-MX30W][Except for Saudi Arabia/Hong Kong/ Taiwan/Australia/New Zealand]
⚠	QACCJ0006AW00	J	AK	AC Power Supply Cord [For Taiwan]
⚠	QACCL0002AW00	J	AN	AC Power Supply Cord [For Australia/New Zealand]
	QANTL0009AWZZ	J	AH	AM Loop Antenna
	TCAUA0045AWZZ	J		Caution Sheet [For Taiwan]
	TCAUH0059AWZZ	J		Caution Sheet [For U.S.A.]
	TCAUH0060AWZZ	J		Caution Sheet [For MD-MX30W]
	TGANZ0028AWZZ	J		Warranty Card [For Taiwan]
	TINSE0284AWZZ	J	AF	Operation Manual [For U.S.A.]
	TINSZ0516AWZZ	J	AB	Quick Guide [For U.S.A.]
	TINSZ0539AWZZ	J		Operation Manual [For MD-MX30W]
	TLSTS0014AWZZ	J	AB	S/S List [For Taiwan]
	UBATU0001AWZZ	J	AE	Battery,SUM-3 (Not Replacement Item)
	92LBAG1460C1	J	AB	Polyethylene Bag,Accessories
	92LBAG1770A	J	AB	Polyethylene Bag,AC Cord [For Hong Kong]
	92LFANT1746A	J	AD	FM Antenna
	92LGCARD1266E1	J	AC	Warranty Card [For MD-MX30W]
	92L319PMX30H10	J	AK	Cord,Speaker
1	RRMCG0208AWSA	J	AS	Remote Control
1- 1	GFTAB1021AWSA	J	AM	Lid,Remote Control

OTHER SERVICE PARTS

	QCNWK0108AFZZ	J	AL	Extension Flat Cable (28Pin)
	QCNWK0109AFZZ	J	AH	Extension Flat Cable (5Pin)
	QCNWK0129AFZZ	J	AG	Extension Connector (2Pin)
	QCNWK0130AFZZ	J	AP	Extension Flat Cable (6Pin)
	RRCDT0101AFZZ	J	CB	Test Disc,Low Reflection
	RRCDT0103AFZZ	J	BK	Head Adjusting Transparend Disc
	RUNTK0532AFZZ	J	BK	Extension PWB for Service
	UDSKA0004AFZZ	J	AZ	CD Pickup Lens Cleaner
	88GMMD-318	J	BF	Low Reflection Disc,Pre-Adjustment Mini Disc (TEACT Test MD)

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1~5	92LPWB3256MANS	J	—	Main/CD Servo/Tuner/Holder/ Holder [For MD-MX30] (Combined ASS'Y)
PWB-A1~5	92LPWB3258MANS	J	—	Main/CD Servo/Tuner/Holder/ Holder [For MD-MX30W] (Combined ASS'Y)
⚠ PWB-B1~3	92LPWB3256DPLS	J	—	Display/Power/Power [For MD-MX30] (Combined ASS'Y)
⚠ PWB-B1~3	92LPWB3258DPLS	J	—	Display/Power/Power [For MD-MX30W] (Combined ASS'Y)
PWB-C	QPWBF0579AWZZ	J	—	Volume (PWB Only)
PWB-D	QPWBF0027AWZZ	J	AD	CD Motor (PWB Only)
PWB-E	92LPWB3168MDSS	J	—	MD Main
PWB-F1,2	QPWBF0554AWZZ	J	AD	MD Mechanism Switch/MD Loading Motor (PWB Only)

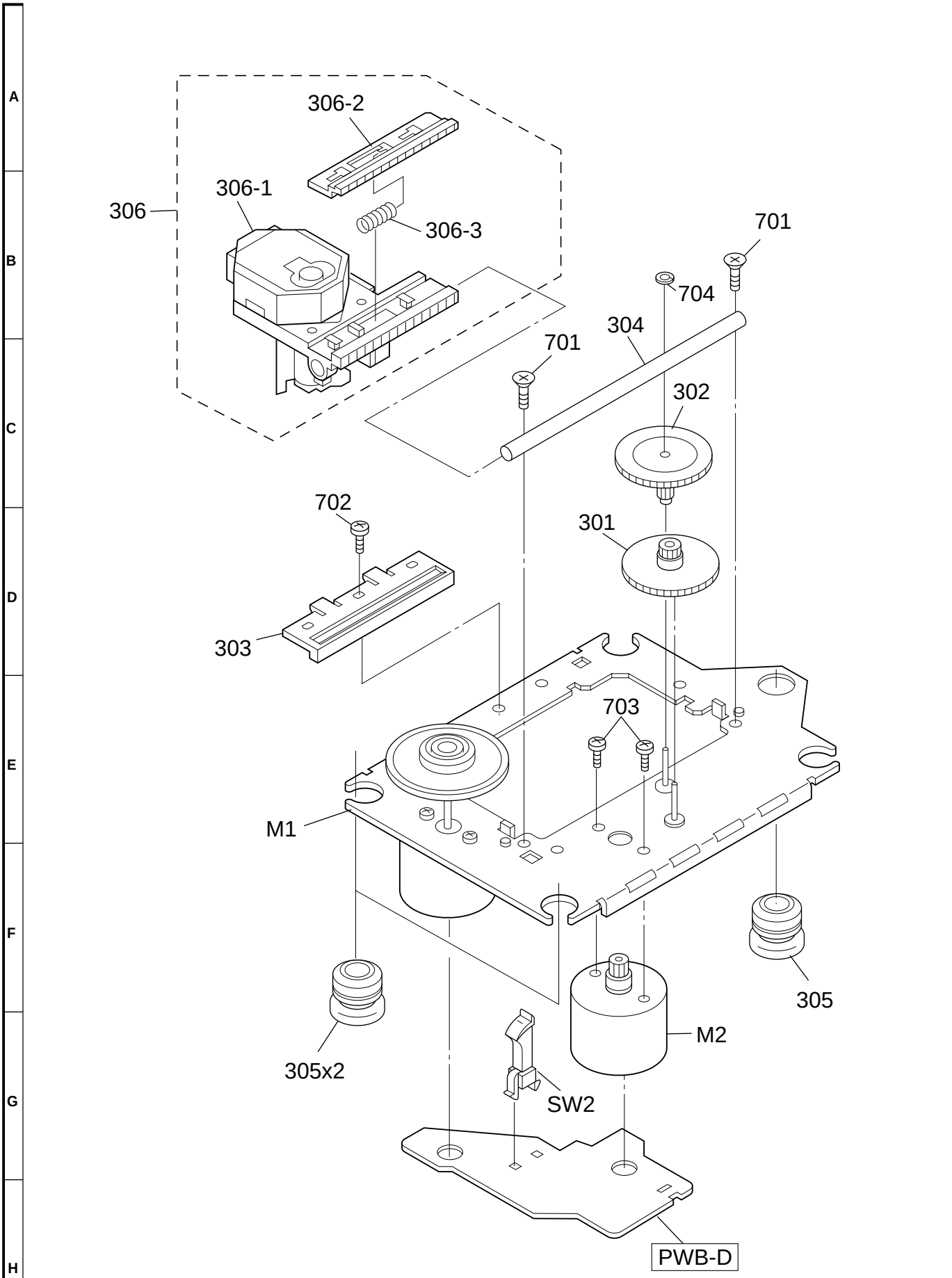


Figure 9 CD MECHANISM EXPLODED VIEW

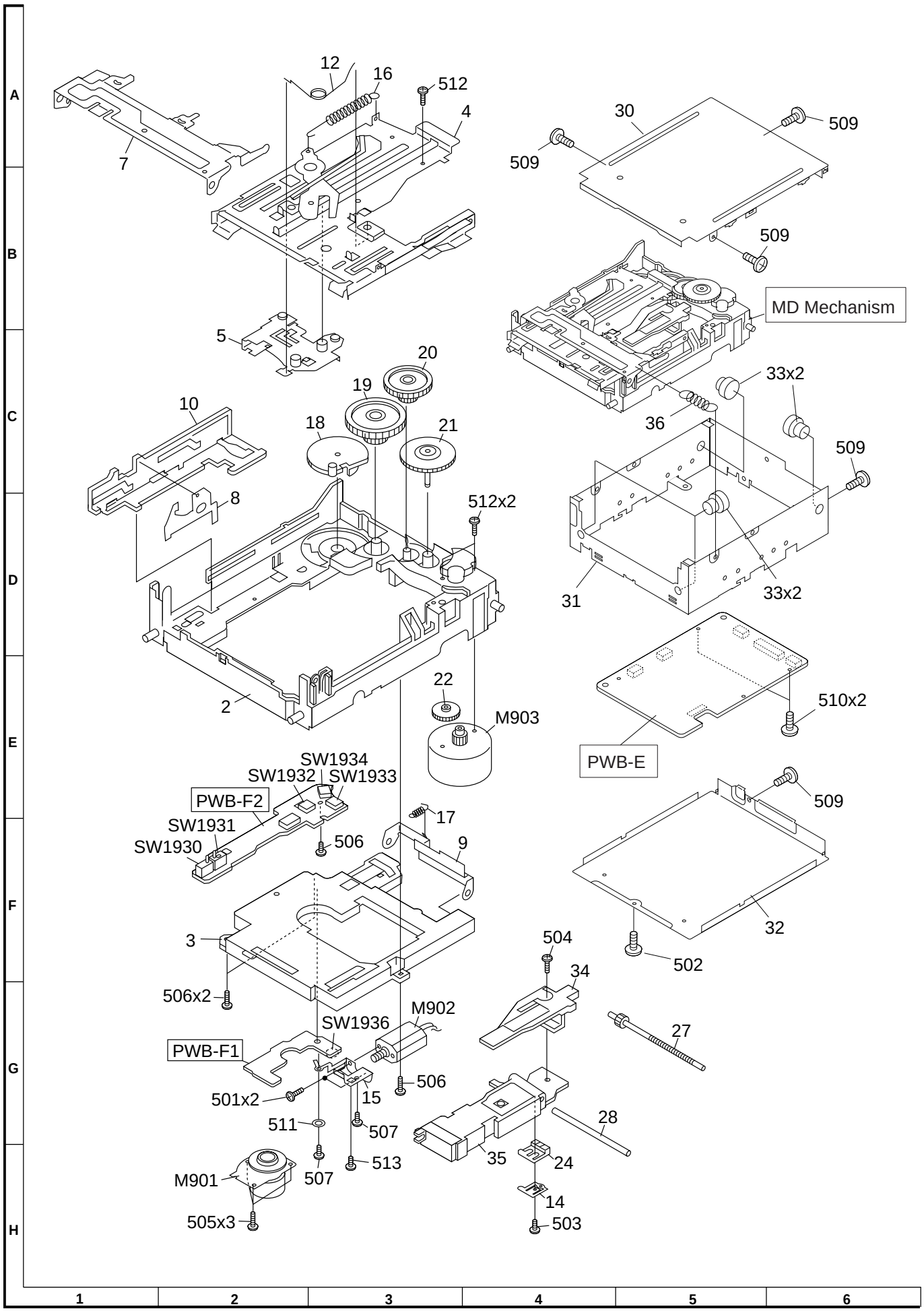


Figure 10 MD MECHANISM EXPLODED VIEW

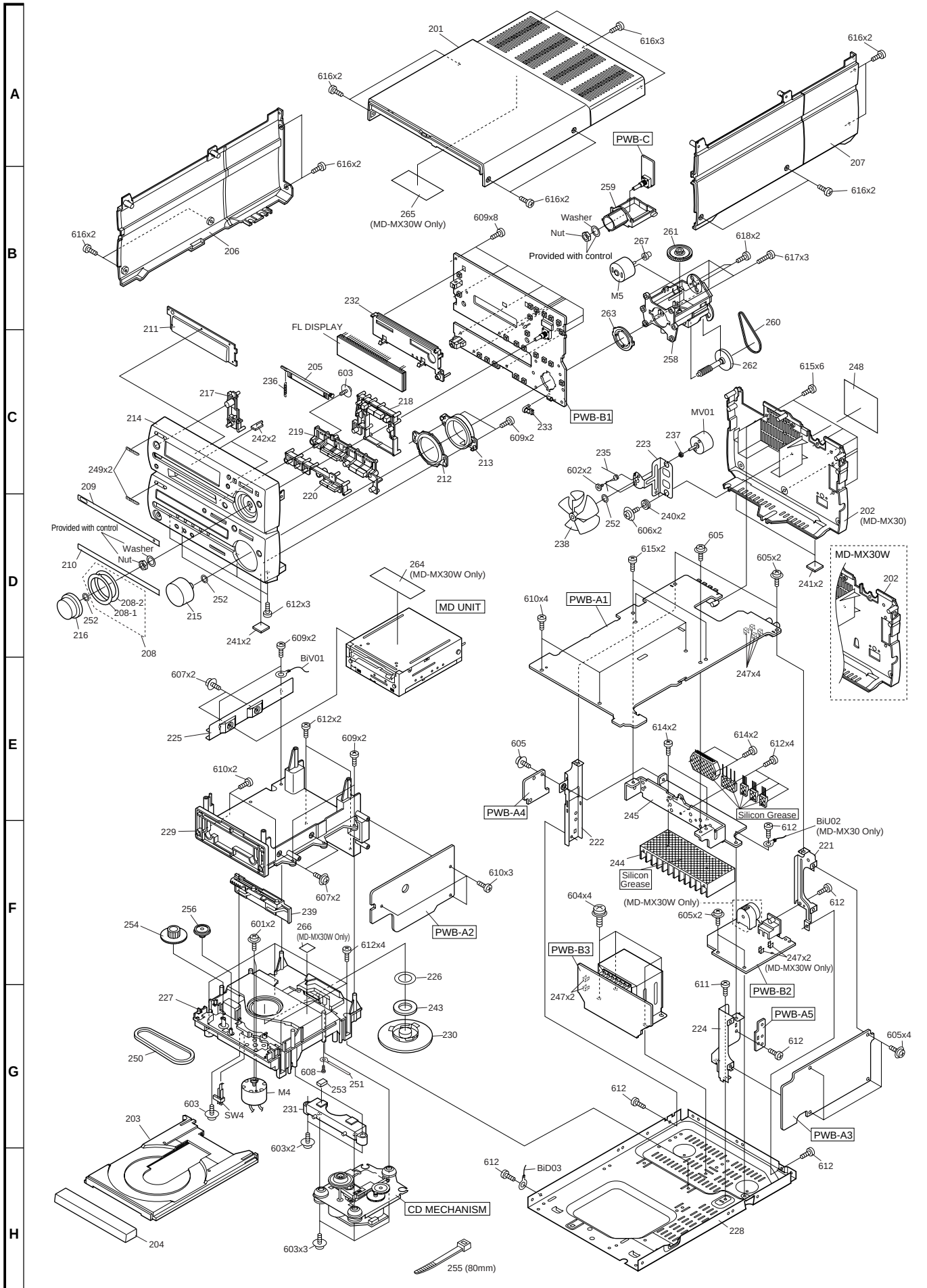


Figure 11 CABINET EXPLODED VIEW

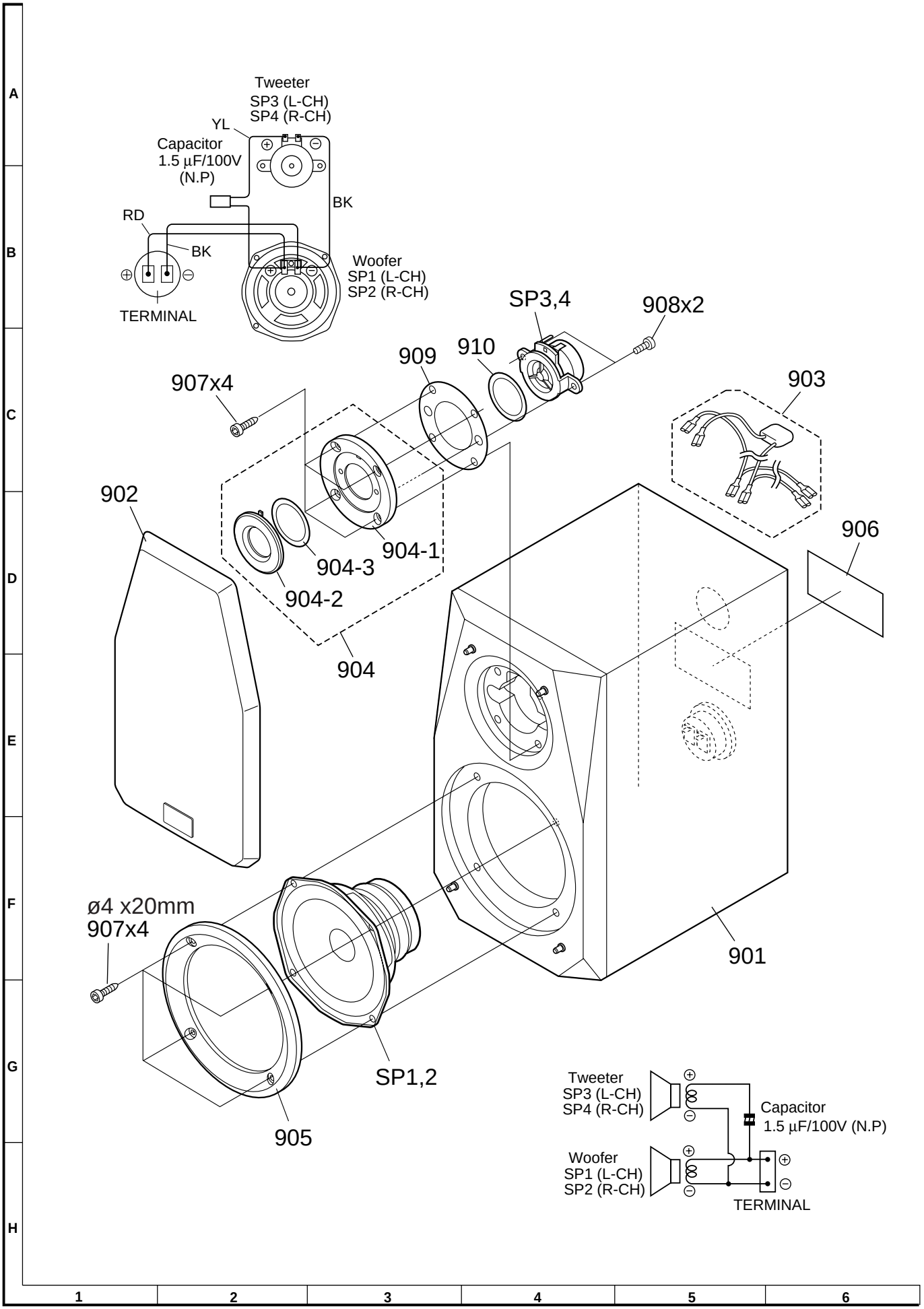
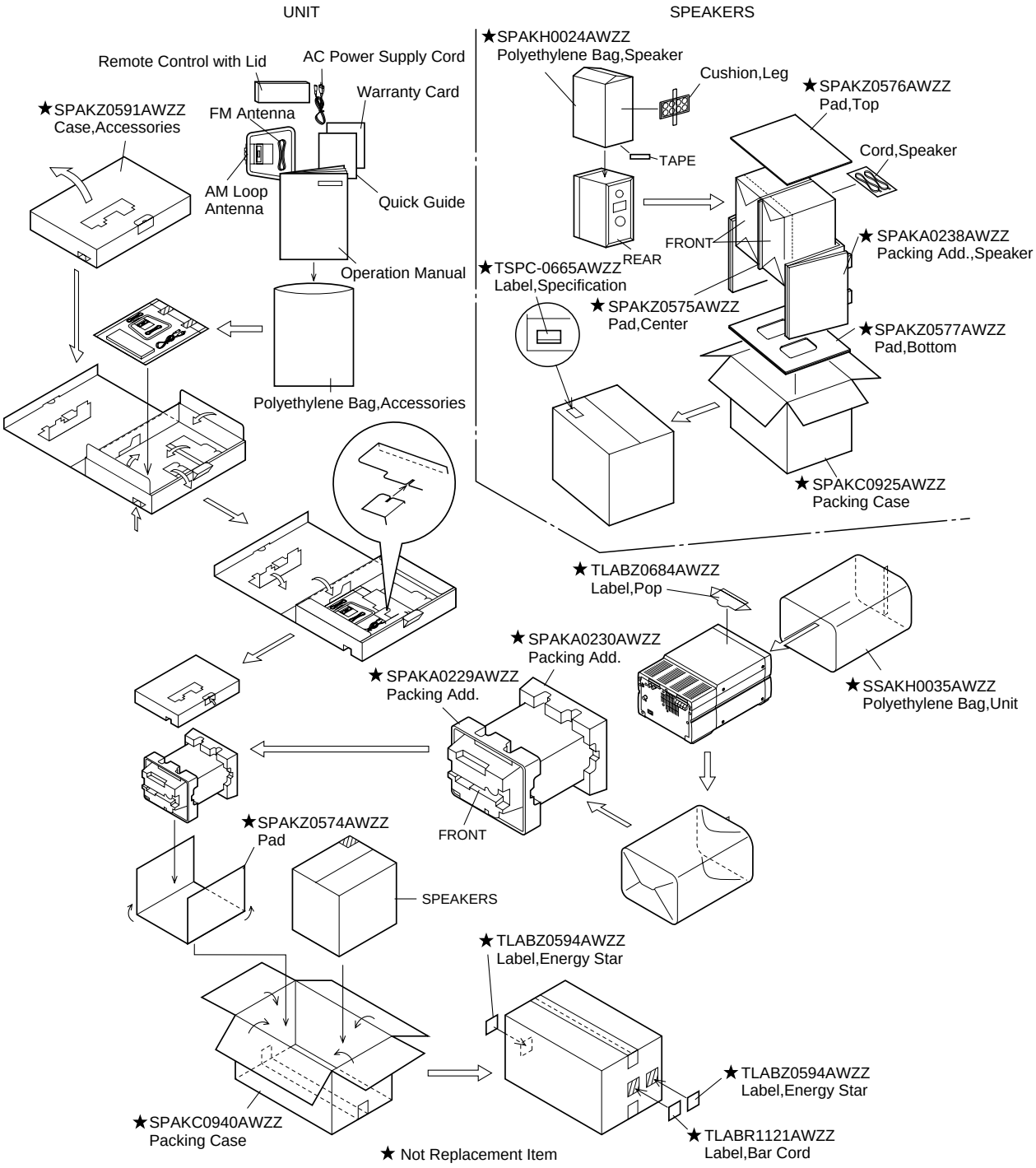


Figure 12 SPEAKER EXPLODED VIEW

PACKING OF THE SET (FOR U.S.A.ONLY)



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